

The Iron Age

VOLUME XXXV.—JANUARY—JUNE, 1885.

- Accident insurance law, German laborers', March 5, p 22
Accidents in English factories, May 21, p 20
Acme bolt cutter, New, April 2, p 43
Lawn mower, Feb. 26, p 33
Additional work for our consuls, June 11, p 16
Adjustable bale tie, New, April 2, p 41
die screw-plate, New Little Giant, Feb. 5, p 37
Advance in nails in the West, Jan. 29, p 14
Advancing prices by resolution, June 4, p 22
Agents' acts, Liability of principal for, March 12, p 5
Agricultural implements into Europe, Introducing American, March 26, p 32
machinery in various countries, Duties on, March 19, p 5
Agriculture and manufactures, Growth of, Jan. 1, p 37
Alabama coal fields, Jan. 15, p 11
Iron-making in, April 2, p 43
Alaska, Resources of, Jan. 29, p 1
Alloys, Chrome-iron, June 11, p 35
Alsace, Germany, How petroleum is quarried in, Feb. 12, p 31
Amalgamated Association break, April 9, p 16
Association, Decadence of the, April 2, p 27
Association, Demand of the, May 7, p 24
Association, Iron manufacturers and the, May 28, p 16
Association, Nailers and the, April 23, p 17
Association, New demands of the, May 7, p 35
Association, Scale convention of the, April 23, p 16
Association, Strength of the, April 16, p 19
America, Ancient civilizations of, March 12, p 9
India and, Jan. 29, p 14
American agricultural implements into Europe, Introducing, March 26, p 32
blast-furnace labor, English vs., May 28, p 32
Institute of Mining Engineers, Feb. 19, p 17; 26, p 17; March 5, p 24; May 28, p 17
Iron and Steel Association, Jan. 1, p 20
Iron and Steel Association, Meeting of the Board of Managers of the, Jan. 15, p 32
Iron and Steel Association on the condition of business, Feb. 19, p 13
Iron and Steel Association, President B. F. Jones, Feb. 19, p 1
machinery from an English standpoint, Design of, April 2, p 1
maritime jurisdiction, Extent of, April 30, p 31
pumps in the desert, March 5, p 23
Scotch pig iron, March 26, p 17
Society of Mechanical Engineers, June 4, p 23
steel rails, Quality of, Feb. 12, p 15
steel trade, Jan. 15, p 16
Tinned Plate Association, Jan. 29, p 25
Amhurst water motor, April 9, p 32
Analyses of Virginia iron ores, Jan. 15, p 15
Analysis of chimney gases, Feb. 5, p 5
Analyzing coal gas, April 23, p 27
coal gas, New method for, March 12, p 9
Ancient civilizations of America, March 12, p 9
foundry practice, April 16, p 1
tunnel, March 26, p 17
Angell gas governor, June 4, p 33
Angle bars, Causes of fracture of, May 21, p 35
Anglo-Russian commercial rivalry, June 11, p 16
Annealing furnace, Buffalo, May 28, p 31
Annual production of pig iron in three countries, Feb. 26, p 16
report of the State geologist for the year 1884, May 21, p 37
review of the British iron and steel trades, Jan. 8, p 9
review of the metal market for 1884, Jan. 1, p 9
Another explanation of the magic mirrors of Japan, Feb. 19, p 13
Anthracite and bituminous coals, Comparative merits of, May 21, p 7
coal production, March 5, p 7
Anti-friction door-hanger, Ohio, April 16, p 33
friction journal bearings, Jan. 22, p 13
Antiquarian's views on Egyptian use of iron, Jan. 29, p 30
Anvil, Farmers' steel plow, May 16, p 31
Apparatus for experimenting on spontaneous combustion, June 25, p 32
Appropriate ornamentation of works in iron, Feb. 19, p 1
Aqueduct, Work on the, May 7, p 13
Arbitration in the coal mines of Western Pennsylvania, March 19, p 29
in the shoe trade, April 2, p 11
in Western Pennsylvania, Feb. 19, p 16
Arch, Portable sugar-maker's, March 19, p 33
Argentine copper ores and matters, Treatment of, June 11, p 35
Argentina financial crisis, Feb. 19, p 27
Argument for domestic tin plates, April 30, p 16
Armored ships, Stripping, March 12, p 33
Armstrong's improved snap-hook, April 2, p 41
Art and decoration, May 14, p 7
education, Great pottery manufacturer on, June 4, p 13
work in iron, May 7, p 25
Ash and garbage can, Boss, Feb. 26, p 33
Aspect of tin-plate manufacture in the United States, April 30, p 1
Assay and analysis of iron and steel, iron ores and fuel, Feb. 5, p 13
Assisting Manitoba wheat growers, Jan. 1, p 35
Association break, Amalgamated, April 9, p 16
Atlantic Lightships across the, April 2, p 19
Auger, Square-hole, March 19, p 29
Australia, Great bridge for, June 4, p 1
Austrian navy, Torpedoes of the, April 16, p 11
Automatic fire-alarm, Judson's, Feb. 5, p 15
injector, New, March 12, p 27
locking machine, Jan. 29, p 25
sprinklers, Modern, June 18, p 5
Automotive tug, May 7, p 40
Avesta process, April 2, p 21
process at Praxell, March 19, p 17
Axes, Exports of, April 2, p 27
Bailey drill, Jan. 22, p 7
Balance, Torsion, June 25, p 31
Baldwin Locomotive Works' exhibit at New Orleans, Jan. 15, p 11
Bale tie, New adjustable, April 2, p 41
Ball bearing door-hanger, April 16, p 33
Baltimore market, Feb. 26, p 31; March 26, p 23; April 9, p 23; 16, p 23; 23, p 23; May 7, p 31; 28, p 31; June 4, p 29; 25, p 28
Banca tin mines, April 30, p 31
Band-saw machine, New, March 19, p 7
saw machine, New low-price, Jan. 8, p 31
saws in lumber mills, June 25, p 32
Bank of England, Handling coin at the, April 9, p 15
Bar iron and steel, Extras on, May 28, p 17
iron in Eastern mills, Cost of producing, May 21, p 19
Barb-wire fence destroyers, Jan. 22, p 31
wire reels, Weight of, April 30, p 11
Barlier after, April 30, p 31
Barometer, Recording aneroid, May 7, p 13
Barrow Works, England, April 23, p 9
Bartholdi Statue of Liberty, Construction of the, June 11, p 13
Basic process and the iron trade in France, Feb. 12, p 30
process in England, Feb. 26, p 15
process, Progress of the, Jan. 8, p 17
process slag, Phosphates from, March 5, p 5
Basin of the Congo, Jan. 1, p 29
Battery, New secondary, June 18, p 17
Bay windows on steam cars, Jan. 29, p 30
Beach sand in New Zealand, Iron making from, Feb. 12, p 11
Beam compasses and calipers, Combined, May 21, p 34
Beer pump and pressure reducer, Jan. 29, p 30
Beginnings of iron shipbuilding, Feb. 5, p 33
Bell Telephone Company, April 9, p 25
Bellair Steel Works, March 12, p 33
Belting, New rubber, March 26, p 31
Use of wire for, Feb. 12, p 15
Bench drill, French's, May 28, p 33
Benner Iron Works, Feb. 5, p 7
Benner's prophecies, May 21, p 20
Bessemer converting-house without a casting-pit, Plan for a, March 19, p 1
pig iron in the West Cumberland district of England, Business and manufacture of, April 9, p 17
plant, Steel casting, Jan. 29, p 31
steel industry, English, May 14, p 16
steel industry in 1884, English, March 12, p 1
steel, Low silicon, April 16, p 19
steel production, Feb. 26, p 16
Better outlook for pig iron, Jan. 22, p 15
prices for wheat next year, Jan. 1, p 37
Bicycle lamp, Queen Anne, April 30, p 31
Big blast, March 12, p 33
Bill filed to foreclose Reading, Jan. 8, p 27
Birmingham, Ala., as an iron-producing center, March 12, p 16
Bituminous coal in Eastern markets, May 7, p 24
coal in the Eastern and Middle States, Position of, Feb. 12, p 14
coal, spontaneous combustion of, Jan. 8, p 31
Blast, Big, March 12, p 33
furnace cinder, Sulphur crystals on, May 14, p 17
furnace gases and the appliances for taking them from the furnace, April 2, p 9
furnace location, Jan. 8, p 27
furnace practice, English and American, April 23, p 17; 30, p 27; May 7, p 35
furnace value of coke, May 28, p 5
furnaces, Condition of the, Jan. 22, p 14, 15; Feb. 12, p 14, 15; March 12, p 16, 17; April 9, p 16, 17; May 14, p 16, 17; June 11, p 16, 17
furnaces, Iron ore and fuel in our, May 21, p 18
furnaces, Patent fuel for, April 9, p 5
Blessing valves, Jan. 15, p 13
Blind-slat holder, Double-clasp, April 16, p 33
Bloodshed feared in the Hocking Valley, Jan. 22, p 30
Blooming mill at the Ebbw Vale Steel Works, June 18, p 1
Board of Managers of the American Iron and Steel Association, Meeting of the, Jan. 15, p 32
to examine fortifications, June 25, p 9
Boiler, Colby, March 5, p 1
explosions in England, Feb. 19, p 15
Boiler, Hazleton, March 12, p 27
incrustations, June 11, p 25
Makers' and Shipbuilders' Society, May 7, p 7
plates, Experience in the use of thick steel May 7, p 7
plates, Thickness of, Feb. 19, p 13
scale, Petroleum for, June 18, p 17
tubes, Leaky, May 21, p 34
Boilers, Jan. 15, p 11
Hints for cleaning, Feb. 12, p 11
Horizontal tubular, New method of constructing, March 19, p 35
Bolekov, Vaughan & Co., March 26, p 33
Bolt and nut machinery, Jan. 15, p 11
cutter, New Acme, April 2, p 43
Boring machine, Horizontal, Jan. 22, p 25
machine, New 48-inch car-wheel, Feb. 5, p 1
machine, 32-inch vertical turret, April 30, p 27
Boss ash and garbage can, Feb. 26, p 33
Boston exhibitions, Rival, Jan. 22, p 15
Bower-Barff process, Oxidation of metals and the, June 11, p 1
Bowling and Low Moor plates, Manufacture of, Feb. 12, p 21
Box strap, Twisted-wire, March 26, p 31
Boxwood for roller skates, April 2, p 27
Substitute for, May 14, p 31
Boyce, March 19, p 29
Bracket, New ladder, April 16, p 11
Brakes, Continuous automatic, Jan. 15, p 7
Brasswork, Modern, March 5, p 21
Brazil, Financial condition of, Jan. 22, p 14
Breakage of rolls in sheet-iron mills, Feb. 26, p 7
Breakwaters, Floating, March 19, p 15
Breast chain, Covert's new patent, June 4, p 37
Brennan torpedo, June 18, p 19
Brick cylinder foundations, May 7, p 31
Bricks made of glass sand, Jan. 1, p 7
Bridge, Forth, April 2, p 1
works, Canadian, Feb. 12, p 9
Bridges, Strengthening, March 12, p 17
British and American blast-furnace practice, April 23, p 17
India, Our trade with, April 9, p 16
Iron and metal markets, Jan. 1, p 25; 8, p 21; 15, p 21; 22, p 19; 29, p 19; Feb. 5, p 27; 12, p 19; 19, p 21; 26, p 21; March 5, p 27; 12, p 21; 19, p 23; 26, p 21; April 2, p 31; 9, p 21; 16, p 23; 23, p 21; 30, p 21; May 7, p 29; 14, p 21; 21, p 23; 28, p 21; June 4, p 27; 11, p 21; 18, p 23; 25, p 21
trade, Continued decline in, Feb. 5, p 37
Brock's chain pipe wrench, June 25, p 31
Broken screw-shafts, April 23, p 5
Bronze and bronze ware, June 4, p 31
casting in Paris, June 4, p 33
Brown, Bonnell & Co., May 7, p 35
Bruce, John M., Late, Jan. 1, p 25
Budget, Canadian, March 12, p 33
Buffalo annealing furnace, May 28, p 31
Bulford's steel smoothing harrow, Jan. 22, p 7
Building blocks from furnace slags, Preparation of, March 5, p 5
trades, Prospects in the, May 7, p 17
Burda Iron Company's litigation, April 23, p 18
Burnah, Iron-making in, March 12, p 1
Burners, Vapor, June 11, p 31
Burning of the rail mill of the Lackawanna Company, May 7, p 39
Burns, Treatment of, April 2, p 15
Burnt iron, June 4, p 1
Business, American Iron and Steel Association on the condition of, Feb. 19, p 13
of foreign corporations in Colorado, April 2, p 7
Buzz planer, New, March 19, p 9
By-products in coking, Utilizing the, April 2, p 41
Cabinet-maker's clamp, May 21, p 33
Cable-road contracts at St. Louis, Jan. 29, p 21
roads, Improvement in, April 2, p 21
Calculating furnace, Improved, Jan. 15, p 1
California, Nail-making in, March 19, p 34
quicksilver product, Feb. 5, p 37
Calorific power of coal, May 14, p 31
Calumet and Hecla copper mines, Leavitt steam stamp at the, June 11, p 1
Canada, New iron-ore fields in, Jan. 15, p 13
Trade of, June 4, p 17
Canadian bridge works, Feb. 12, p 9
budget, March 12, p 33
iron-ore districts, Jan. 22, p 9
manufacturers in session, Jan. 29, p 25
Canal-boat by air, Propelling a, March 26, p 23
survey, Nicaragua, Jan. 1, p 20
Canan dredging-machine shovel patent, March 19, p 35
Carbon in steel, Condition of, Feb. 26, p 15
Carbonic acid in collieries, Outbursts of, June 4, p 38
Card teeth, Steel instead of iron for, April 30, p 1
Car-wheel boring machine, New 48 inch, Feb. 5, p 1
wheel chuck, New 42-inch, April 9, p 33
Cars, Coal dump, June 25, p 13
Carriage-wheel, Smith suspension, May 16, p 31
Carter's needle hay knife, June 25, p 31
Cast and malleable iron fittings, June 11, p 27
iron, Vaporization of phosphorus from, June 11, p 35
iron work, Design for, May 21, p 34
Casting plate glass, Feb. 5, p 33
Castings by measurements, Weights of, March 26, p 33
Mills wrought iron, June 4, p 1
Cause of and remedy for stagnant trade, Jan. 1, p 29
of solar heat, Jan. 29, p 11
Causes of fracture of angle bars, May 21, p 35
of the manufacturers' defeat, June 25, p 16
Cellar-window grate, Combination, Feb. 5, p 37
Cellular structure of steel, March 19, p 17
Cement, Slag, Feb. 19, p 15
Central American crisis, March 26, p 16
Centrifugal pumps, English, June 4, p 31
Cereals, Distribution and consumption of, April 16, p 11
Certificates of quality of the Swedish Iron Board, March 19, p 35
Chain pipe wrench, Brock's, June 25, p 31
testing machine, Improved lever, Feb. 5, p 19
tongs, Improved wrenches and, March 26, p 31
Chaney's improved clothes-line pulley, March 5, p 37
Charcoal burning in kilns at Boxholm, Sweden, March 12, p 5
Chattanooga market, Jan. 1, p 27; 8, p 23; 15, p 23; 22, p 21; 29, p 20; Feb. 5, p 29; 12, p 20; 19, p 22; 26, p 22; March 5, p 29; 12, p 20; 19, p 25; 26, p 21; April 2, p 33; 9, p 23; 16, p 25; 23, p 23; 30, p 23; May 7, p 29; 14, p 23; 21, p 25; 28, p 25; June 4, p 29; 11, p 23; 18, p 23; 25, p 23
Cheap machinery, Efficient machinery vs., June 18, p 9
magnesium, Feb. 19, p 13
Chemical reactions in the crucible-steel process, May 7, p 41
Chicago market, Jan. 1, p 26; 8, p 22; 15, p 22; 22, p 20; 29, p 23; Feb. 5, p 28; 12, p 23; 19, p 22; 26, p 21; March 5, p 28; 12, p 23; 19, p 24; 26, p 22; April 2, p 32; 9, p 22; 16, p 24; 23, p 22; 30, p 22; May 7, p 30; 14, p 22; 21, p 24; 28, p 22; June 4, p 30; 11, p 22; 18, p 24; 25, p 22
Stokers in, April 16, p 34
Chill, Late developments in, June 25, p 27
Chilled cast-iron armor, French and German experiments against, Jan. 8, p 1
Chill since the war, May 4, p 25
Chimney gases, Analysis of, Feb. 5, p 5
Chimneys, Table of sizes of, Jan. 29, p 13
China, New rope factory in, Jan. 22, p 31
Chinese music, weights and measures, Common origin of, Jan. 8, p 15
Cholera, Ozone and the, March 12, p 27
Chrome-iron alloys, June 11, p 35
Chronology of steamboating, Feb. 19, p 7
May 21, p 7
Chuck, Horton, March 12, p 9
New 42-inch ear-wheel, April 9, p 33
Cincinnati market, Jan. 1, p 27; 8, p 23; 15, p 23; 22, p 21; 29, p 20; Feb. 5, p 29; 12, p 20; 19, p 23; 26, p 22; March 5, p 29; 12, p 22; 19, p 25; 26, p 23; April 2, p 33; 9, p 23; 16, p 25; 23, p 23; 30, p 25; May 7, p 31; 14, p 23; 21, p 25; 28, p 23; June 4, p 29; 11, p 23; 18, p 25; 25, p 23
Cinder in the Lehigh and Schuylkill districts, April 30, p 29
pig, Jan. 29, p 9
Circles, shears, New design of, April 23, p 33
Circuits, Commercial, June 4, p 5
Clamp, Cabinet-maker's, May 21, p 33
Clapp-Griffiths plant at Pittsburgh, New, April 16, p 19
Griffiths process, Feb. 26, p 16; April 30, p 17; June 25, p 17
Griffiths process, Labor in iron mills and the, March 5, p 22
Griffiths steel plant at Pittsburgh, New, March 19, p 1
Clerk gas engine, May 7, p 40
Cleveland district, England, Iron-making in the, May 21, p 19
Climax pipe wrench, Feb. 26, p 33
Clothes reel, June 4, p 37
Coal and freight, Sliding scale for, Jan. 8, p 16
and iron-ore production of Ohio, April 23, p 9
arbitrators' award, Western Pennsylvania, Feb. 19, p 9
Calorific power of, May 14, p 31
cinder in construction, Use of, June 4, p 38
crisis, Jan. 8, p 17
dump cars, June 25, p 13
dust in colliery explosions, June 11, p 25
dust, Utilization of, March 26, p 32
fields of New South Wales, June 11, p 13
gas, Analyzing, April 23, p 27
gas, Simple method of analyzing, Jan. 29, p 5
in Great Britain, Production of, April 2, p 21
in Indiana, March 5, p 1
in Japan, March 5, p 13
Influence of moisture on, Jan. 29, p 13
market, Jan. 1, p 25; 8, p 21; 15, p 25; 22, p 22; 29, p 21; Feb. 5, p 31; 12, p 23; 19, p 23; 26, p 21; March 5, p 27; 12, p 23; 19, p 24; 26, p 23; April 2, p 31; 9, p 23; 16, p 23; 23, p 25; 30, p 31; May 7, p 29; 14, p 23; 21, p 25; 28, p 21; June 4, p 27; 11, p 21; 18, p 23; 25, p 21
mines of Western Pennsylvania, Arbitration in the, March 19, p 29
Coal mining, Co-operative, March 12, p 16
pool, History of a, May 7, p 15
production, Anthracite, March 5, p 7
separating machine, New, June 11, p 25
Slight concession on, Jan. 22, p 31
strike, Western Pennsylvania, April 16, p 18; 30, p 16
Structure of, Jan. 8, p 1
Cooling stations of the world, May 21, p 33
Coe Hill ore deposits, June 4, p 13
Coes' knife-handle wrenches, May 28, p 31
Coinage, Silver, March 5, p 22
Coke, Blast-furnace value of, May 28, p 5
on the Pacific Slope, Consumption of, Feb. 5, p 15
ore and limestone in the Mahoning Valley, Freights on, March 19, p 19
value of, April 30, p 16
Washington Territory, Feb. 5, p 23
Colby boiler, March 5, p 1
portable boiler and feed-water heater, March 26, p 1
Cold-rolled steel, March 12, p 15
Collapse of a New England exhibition company, Jan. 1, p 25
Colliery explosions, Coal dust in, June 11, p 25
Collisions with icebergs, Safeguard against, June 18, p 17
Colombia, Our trade with, April 16, p 18
Treaty with, May 7, p 39
Colonial extension, March 12, p 27
Color of ozone, Jan. 29, p 5
Colorado Coal and Iron Company, Jan. 22, p 7
Colt's malleable-iron lifting jack, Feb. 5, p 37
Columbia two-track tricycle, March 26, p 9
Combination cellar-window grate, Feb. 5, p 37
tool, Jan. 8, p 31; June 4, p 37
Combined beam compasses and calipers, May 21, p 34
Combustion of fuel on grate bars, Steam as an aid to the, April 23, p 1
of hydrogen, Heat of, Jan. 1, p 29
Commerce, Hong Kong's, Feb. 12, p 13
Commercial advantages of Harve de Grace, March 5, p 38
bearings of the Franco-Chinese peace settlement, June 18, p 19
cities, June 4, p 5
effects of foreign war, April 2, p 17
exchanges and speculation, Jan. 1, p 20
guarantees, Feb. 19, p 16
relations with Mexico, Feb. 5, p 13
resources of the Congo, June 25, p 17
rivalry, Anglo-Russian, June 11, p 16
Common origin of Chinese music, weights and measures, Jan. 8, p 15
Comparative efficiency of steam and hydraulic elevators, Feb. 12, p 1
merits of anthracite and bituminous coals, May 21, p 7
statistics of English and foreign railways, Feb. 5, p 37
Comparison of pig-iron districts, March 19, p 18
Competition in fuels and light, New, Jan. 29, p 15
Competitor for the seaboard coal trade, New, Jan. 22, p 1
Complexity in machinery, April 2, p 19
Compound accumulator pumping engines, April 23, p 1
Compressed air in glass manufacture, May 14, p 31
air, Transmission of power by, Feb. 5, p 13
Compulsory silver coinage, Feb. 5, p 22
Concerning statistics, June 25, p 16
Concord Axle Works, June 4, p 17
Concrete bridge in one day, Erection of a, May 7, p 23
Condensing lead and zinc fumes, June 25, p 11
Condition of the blast furnaces, Jan. 22, p 14, 15; Feb. 12, p 14, 15; March 12, p 16, 17; April 9, p 16, 17; May 14, p 16, 17; June 11, p 16, 17
Conditions of success in manufacturing, Feb. 26, p 11
Congo, Basin of the, Jan. 1, p 29
Commercial resources of the, June 25, p 17
Trade of the, March 12, p 17
Congratulatory, Feb. 5, p 22
Conspiracy laws, March 5, p 22
Constructing horizontal tubular boilers, New method of, March 19, p 35
Construction of a dry dock in quicksand, June 11, p 17
of steam boilers, Steel vs. iron in the, March 12, p 1
of the Bartholdi Statue of Liberty, June 11, p 11
Consuls, Additional work for our, June 11, p 16
Consumption for steel, New, Jan. 8, p 9
of coke on the Pacific Slope, Feb. 5, p 15
of iron ore and fuel in the production of iron and steel, May 21, p 9
Continued decline in British trade, Feb. 5, p 37
Continuous automatic brakes, Jan. 15, p 7
Contract for the delivery of steel, Decision as to a, Feb. 5, p 11
Labor bill, Foreign, Feb. 26, p 23
Contracts abolished, Special overland, Jan. 15, p 16
of married women, Feb. 26, p 7
Convict labor, Trades union plan for, Jan. 8, p 31
Co-operation, Fictitious, March 12, p 17
Successful, Jan. 29, p 25
Co-operative coal mining, March 12, p 16
Copper and brass, Jan. 15, p 11

T1
I72dSet

- Copper companies, Spanish, May 14, p 16
Electrolysis of, Feb. 12, p 30, March 5, p 1
mines in 1884, Lake Superior, March 26, p 16
ore mines, Lake Superior, Jan. 29, p 21
Outlook for, May 28, p 25
Oxidation of, Jan. 1, p 1
production of the West, June 4, p 22
smelting in the West, Jan. 29, p 13
Coping press, Lightning, May 21, p 33
Cord grip, Jenks', April 9, p 31
Corn knife, Crescent, Jan. 1, p 57
Copper, Screen door, June 4, p 37
Corundum knife sharpener, Feb. 5, p 37
Cost of iron at Bellefonte, Pa., Jan. 8, p 17
of producing bar iron in Eastern mills, May 21, p 19
of producing pig iron, Estimates of the, June 18, p 18
of production, Selling below, March 26, p 16
of railroad freight traffic, June 18, p 35
of rails in Germany, March 26, p 15
of the distribution of power by electricity, May 21, p 27
of unloading and loading freight, May 16, p 25
Country labor in English towns, Feb. 26, p 7
Cours d'Exploitation des Mines, Jan. 22, p 30
Course of the lead market, June 25, p 16
Cover's new patent breast chain, June 4, p 37
Cordway four-cylinder engine, Feb. 12, p 33
Crane, 30-ton electric, March 26, p 33
35-ton steam, April 9, p 1
Crank-shafts, Strength of, March 5, p 21
Crescent corn knife, June 4, p 37
Crescent loose pulley arrangement, June 4, p 17
Crimora manganese mine, April 2, p 15
Crisis, Central American, March 26, p 16
Coal, Jan. 8, p 17
Cross-cut saw, Wonder, Feb. 19, p 51
Crucible-steel process, Chemical reactions in the, May 7, p 41
Crushing machinery, April 16, p 9
Crystalline structure in iron as the effect of vibratory shocks, May 28, p 1
Cuban finances and the sugar crop, March 12, p 16
Canader, Erruria, April 23, p 33
Capula, Melting steel scrap in a, April 30, p 15
Curious wooden beam, April 23, p 33
Currycomb, Taylor's wire-tooth, April 2, p 41
comb, Wire, March 26, p 31
Curve tracing, March 12, p 31
Custom house irregularities, March 26, p 31
Cut-off gear, Topmill variable and automatic, April 2, p 17
Cutlery manufacturer, Injunction against a, Jan. 1, p 37
Daily press, iron trade and the, March 19, p 18
Dangerous practice, March 12, p 9
Dangers of natural gas, Feb. 26, p 13
Debtor to a creditor nation, What changed us from a, Jan. 1, p 17
Debts and accounts, Outlawed, April 2, p 26
Decadence of the Amalgamated Association, April 2, p 27
Decline in the price of food, Feb. 5, p 33
Decorative metal work, Feb. 19, p 7
Delivery of steel, Decision as to a contract for the, Feb. 5, p 11
Demand of the Amalgamated Association, May 7, p 24
Demands of the Amalgamated Association, New, May 7, p 35
Dental instruments, Japanese, Feb. 5, p 7
Denying a receivership, March 12, p 27
Department of Government, New, Feb. 19, p 16
Depositing nickel upon zinc, May 21, p 19
Depression compared, Periods of, Jan. 29, p 14
Derby roller skate, May 21, p 33
Desert, American pumps in the, March 5, p 23
Design for a small Bessemer plant, New, May 28, p 31
for cast-iron work, May 21, p 34
of American machinery from an English standpoint, April 2, p 1
of circular shears, New, April 23, p 33
Designing of ordinary iron highway bridges, March 12, p 31
Device, Tapping, April 2, p 7
Dexter folding machine, April 16, p 9
Diagram of Parliamentary rules, April 9, p 9
Diamonds in South Africa, May 28, p 15
Dispute at the Oliver Wire Mill, Pittsburgh, March 12, p 18
Distribution and consumption of cereals, April 16, p 11
of power by electricity, Cost of the, May 21, p 27
of products, or the mechanism and metaphysics of exchange, Feb. 26, p 7
Diving dress, Novel application of the, March 5, p 13
Dollar, Silver, March 19, p 19
Dolphin, Report on the, June 25, p 9
Domestic export, Sugar crisis and our, May 28, p 32
the plates, argument for, April 30, p 16
Dominion, Trade of the, Feb. 12, p 31
Door check and bumper, Little Jewel, May 21, p 33
check, Perkins', May 7, p 39
hauger, Ball bearing, April 16, p 33
hauger, Ohio anti-friction, April 16, p 33
hauger, Standard, June 4, p 37
Double bench wringer, Keystone, April 9, p 31
clasp blind-slat holder, April 16, p 33
facing machine, May 14, p 32
Dowell machine, Small, June 4, p 17
Dredging machine shovel patent, Canan, March 19, p 33
Drill, Bailey, Jan. 22, p 7
patent, Rachel, June 18, p 15
presses, Feb. 12, p 33
Drill, March 12, p 9
Drilling machines, April 16, p 9
Drinking water, Zinc in, April 30, p 1
Dry dock in quicksand, Construction of a, June 11, p 17
dock in the world, Largest, Jan. 8, p 23
docks, Timber, May 7, p 40
Ducannon Iron Company, March 12, p 9
Duties on agricultural machinery in various countries, March 19, p 5
Duty on wood and metal beams wound with thread, Feb. 26, p 23
Early railway, Progress of the, Jan. 22, p 15
Early Blue Book, March 19, p 33
Earliest use of gunpowder, Jan. 29, p 23
Eastern markets, Bituminous coal in, May 7, p 24
Ebbw Vale Steel Works, Blooming mill at the, June 18, p 1
Economic manufacturing, Latest advance in, June 11, p 11
Economy and duty of American pumping machinery, Feb. 26, p 1
pipe vice, March 12, p 31
Edgar Thomson Steel Works, Improvements at the, Feb. 26, p 23
Thomson to resume, Feb. 5, p 23
Edison electric light, Year's result with, Feb. 19, p 31
Education, Dr. Perce on technical, May 28, p 33
of engineers in Russia, May 21, p 23
Technical, April 16, p 7
Effect of a Russo-English war, April 30, p 16
of carbolic acid upon the illuminating power of gas, June 11, p 25
Effects of obstructions in gun barrels, Feb. 5, p 19
Efficient machinery vs. cheap machinery, June 18, p 9
Egyptian use of iron, Antiquarian's views on, Jan. 29, p 30
Eighty-pound steel rail, Feb. 5, p 17
Elba, Iron ores of, May 14, p 1
Electric crane, Twenty-ton, March 26, p 33
lamp, Self-contained, May 21, p 27
light plant, Portable, April 30, p 1
lighting and electric plating, Feb. 12, p 33
Electric locomotion, April 23, p 33
railway, Underground, Jan. 29, p 30
Electrical hypothesis of flame, Jan. 1, p 31
railroad for San Francisco, April 30, p 27
science, Recent advances in, Feb. 12, p 1
Electricity compared with gas, Jan. 1, p 5
on railroads, Jan. 8, p 31
Professor Tyndall on, March 19, p 15
and the electric telegraph, April 16, p 15
Electro-dynamics, Jan. 22, p 31
Electrolysis, March 12, p 31
Electrolysis of copper, Feb. 12, p 30; March 5, p 1
Electrolytic process, Marchese, June 18, p 11
Electrolytic refining of copper, May 7, p 41
Elevated railways, Safety of the, March 12, p 18
Elevating and conveying machinery, March 12, p 9
Ellich racket screw-driver, April 2, p 41
Emerald in the world, Largest, March 12, p 9
Emery-wheel machine, Emery-wheels and, April 2, p 1
Emery's improved scissors sharpener, May 7, p 39
Emigration, Stimulated, March 26, p 16
Empire scroll-saw, March 5, p 13
End platforms of freight cars, May 7, p 13
Energy and motion, Feb. 5, p 13
Engine, New oscillating, June 18, p 37
Engines and boilers, May 7, p 40; June 11, p 27
and boilers in France, June 11, p 32
and threshers, June 11, p 27
Trenton, May 7, p 1
Engineering, Recent progress in, April 16, p 11
Engineers in Russia, Education of, May 21, p 23
England and the United States, Wages in, Jan. 15, p 16
Basic process in, Feb. 26, p 15
English and American blast-furnace practice, April 30, p 27; May 7, p 35
and foreign railways, Comparative statistics of, Feb. 5, p 37
and Spanish technical dictionary, April 9, p 9
Bessemer steel industry, May 14, p 16
Bessemer steel industry in 1884, March 12, p 1
centrifugal pumps, June 4, p 31
factories, Accidents in, May 21, p 30
Letter, Jan. 1, p 31; Feb. 5, p 27; 12, p 22; 25, p 29; Feb. 5, p 33; 12, p 26; 19, p 11; 26, p 9; March 5, p 15; 12, p 13; 19, p 11; 26, p 13; April 2, p 13; 9, p 11; 16, p 13; 23, p 13; 30, p 13; May 7, p 11; 14, p 13; 21, p 15; 28, p 9; June 4, p 15; 11, p 15; 18, p 13; 25, p 13
navy, June 11, p 31
public iron companies, April 23, p 16
rail-mill engines, Jan. 29, p 1
railroads, wages paid on, June 11, p 16
towns, Country labor in, Feb. 26, p 7
vs. American blast furnace labor, May 28, p 32
Enlargement of the Erie Canal, April 2, p 35
Enterprise tobacco cutter, April 23, p 31
Erection of a concrete bridge in one day, May 7, p 23
Erie Canal and the St. Lawrence route, June 18, p 15
Canal, Enlargement of the, April 2, p 35
Estimates of the cost of producing pig iron, June 18, p 15
Estimation of manganese, June 25, p 11
Erruria, Canader, April 23, p 33
Exhaust steam for heating, April 16, p 5; May 14, p 9
Expanding reamer, Pelton's, May 7, p 13
Experiments, Gun-bursting, March 19, p 9
Experimenting on spontaneous combustion, Apparatus for, June 25, p 32
Explosion of natural gas at Pittsburgh, Feb. 5, p 33
Explosions in England, Boiler, Feb. 19, p 15
Natural-gas, Feb. 5, p 33
Exports of axes, April 2, p 27
of iron and steel, Our, Feb. 5, p 22
Exposition, New Orleans, Jan. 1, p 17
Extent of American maritime jurisdiction, April 30, p 31
Extension, Colonial, March 12, p 27
Oliver Brothers, Jan. 29, p 7
Oliver Bros. & Phillips, Jan. 29, p 14
roller skate, April 9, p 31
Extras on bar iron and steel, May 28, p 17
Fac simile telegraphic transmission, March 19, p 1
Facing machine, Double, May 14, p 33
Fall in prices since 1875, March 19, p 13
Fast cruiser, Model, March 5, p 13
railroad work, April 2, p 43
Feed-water heater, Colby portable boiler and, March 26, p 1
Feeding boilers at the bottom, June 18, p 1
Fence destroyer, Barb-wire, Jan. 22, p 31
guard, Safety barb-wire, March 5, p 37
Fiber, Vulcanized, April 9, p 25
Fictitious co-operation, March 12, p 17
names in partnerships, April 23, p 17
Filter paper, Toughened, June 4, p 38
Financial, Jan. 1, p 25; 8, p 21; 15, p 21; 22, p 19; 29, p 19; Feb. 5, p 27; 12, p 19; 19, p 21; 26, p 21; March 5, p 27; 12, p 21; 19, p 23; 26, p 21; April 2, p 9; 9, p 16; 23, p 23; 30, p 21; May 7, p 29; 14, p 21; 21, p 23; 28, p 21; June 4, p 27; 11, p 21; 18, p 23; 25, p 21
condition of Brazil, Jan. 22, p 14
crisis, Argentine, June 11, p 27
Department supplies, May 7, p 5
insurance, Mutual, March 26, p 11
Resistance of cast and wrought iron columns to, June 18, p 17
Firearms guide, March 12, p 31
First steamer to cross the ocean, Feb. 26, p 31
Fishkill Corliss engine, March 12, p 9
Fitters' wages, April 23, p 33
Fixtures, Right to remove, May 28, p 16
Flame, Electrical hypothesis of, Jan. 1, p 31
Flander's spring piston packing, April 23, p 15
Floating breakwaters, March 19, p 15
Flora of bank notes, May 28, p 1
Folding nail box, April 2, p 41
Foot and power presses, April 16, p 9
power machinery, May 7, p 5
Foreclosures in 1884, Railway, Jan. 22, p 5
Foreign coins, value of, Jan. 8, p 31
contract labor bill, Feb. 26, p 31
corporations in Colorado, Business of, April 2, p 7
labor, Imported, Feb. 26, p 16
markets, Jan. 1, p 27; 8, p 23; 15, p 23; 22, p 21; 29, p 21; Feb. 5, p 29; 12, p 21; 19, p 23; 26, p 23; March 5, p 23; April 16, p 20; 23, p 31; 30, p 32; May 7, p 35; 14, p 32; 21, p 33; 28, p 31; June 4, p 37; 11, p 31; 18, p 37; 25, p 35
news, Recent, Jan. 22, p 30
trade, Jan. 1, p 35
war, Commercial effects of, April 2, p 17
Forged thimble screw wrench, May 14, p 31
Forging press, Large, March 26, p 33
Forth Bridge, April 2, p 1
Fortifications, Board to examine, June 25, p 9
Foundations, Brick cylinder, May 7, p 31
Foundry practice, Ancient, April 16, p 1
Four sided molder, June 4, p 17
Fontaine locomotive a failure, Jan. 22, p 21
Fox's lawn rake, May 21, p 33
France, Engines and boilers in, June 11, p 32
Franco-Chinese peace settlement, Commercial bearings of the, June 18, p 19
French's bench drill, May 28, p 33
French and German experiments against chilled cast-iron armor, Jan. 8, p 1
bounty system, Results of the, Feb. 26, p 33
mineral statistics for 1883, June 4, p 33
Freight cars, End platforms of, May 7, p 13
Cost of unloading and loading, May 16, p 25
pool dead, May 7, p 24
Freight transportation interests, May 28, p 17
Freights on coke, ore and limestone in the Mahoning Valley, March 19, p 19
Frith, Edward, May 14, p 1
Furnace, Knab, June 11, p 35
New water-jacket, June 18, p 11
work, Good, May 7, p 35
Furnaces, Blast, Condition of the, Jan. 22, p 14, 15; Feb. 12, p 14, 15; March 12, p 16, 17; April 9, p 16, 17; May 14, p 16, 17; June 11, p 16, 17
Future policy of the Lake Superior iron-ore companies, Jan. 1, p 21
Fuel in England, Gaseous, Feb. 5, p 1
New, March 12, p 7
Fuels and light, New competition in, Jan. 29, p 15
Gas and petroleum in Manitoba, Feb. 5, p 19
at Pittsburgh, Natural, Jan. 1, p 31
Cost of production and profit on, March 19, p 29
electricity compared with, Jan. 1, p 5
engine, Steam, May 14, p 31
firing as applied to boilers, New Siemens system of, Feb. 26, p 1
governor, Angell, June 4, p 33
wells, Natural, Feb. 13, p 21
works, Purdy's, March 12, p 23
Gases and the appliances for taking them from the furnace, Blast-furnace, April 2, p 9
Gaseous fuel in England, Feb. 5, p 1
products of combustion of pyrites, Composition of the, Feb. 12, p 30
Gates, Steel, June 11, p 31
Gauge ripping plane, New, May 14, p 31
Steven's new surface, April 16, p 29
General hardware, Jan. 1, p 23; 8, p 24; 15, p 24; 22, p 23; 29, p 23; Feb. 5, p 30; 12, p 23; 19, p 26; 26, p 24; April 2, p 34; 9, p 24; 16, p 26; 23, p 24; 30, p 24; May 7, p 32; 14, p 34; 21, p 26; 28, p 24; June 4, p 30; 11, p 24; 18, p 26; 25, p 24
machinery supplies, June 11, p 27
German laborers accident insurance law, March 5, p 22
navy, Feb. 12, p 23
Patent Office, March 12, p 31
rock drill, Jan. 29, p 30
tariff, Jan. 22, p 23
Germany, Iron and steel in, May 7, p 19
Glass, hardened and tempered, April 16, p 1
manufacture, Compressed air in, May 14, p 31
sand, Bricks made of, Jan. 1, p 7
Globe ice breaker, Jan. 29, p 29
Gogebic Iron Mines, April 30, p 1
Gold, Silver versus, March 19, p 18
standard for Hawaii, Feb. 12, p 29
Good fortune, Pioneer manufacturers', Jan. 29, p 29
furnace work, May 7, p 35
Government, New department of, Feb. 19, p 16
Granite State lawn mower, April 2, p 41
Gravity lock, New, June 18, p 33
Great bridge for Australia, June 4, p 1
Britann, Open-hearth steel in, May 14, p 1
Britann, Shipbuilding in, Jan. 1, p 23; 30
pottery manufacturer on art education, June 4, p 13
Western, Sirius and, Feb. 26, p 17
Grinding machines, April 16, p 9
Growth of agriculture and manufactures, Jan. 1, p 37
Guarantees, Commercial, Feb. 19, p 16
Guardians of the people, Feb. 12, p 15
Gun-bursting experiments, March 19, p 9
cotton is made, How, Jan. 1, p 5
forgings and the Government, Sheffield, Jan. 1, p 35
works in Italy, New, Feb. 5, p 11
Guns as heat engines, April 23, p 7
Gunpowder, Earliest use of, Jan. 29, p 23
Manufacture of liquid, March 12, p 31
Hand tools for iron and wood working, Jan. 15, p 1
making in Alabama, April 2, p 43
making in Burmah, March 12, p 1
making in the Cleveland district, England, May 21, p 19
manufacturers and the Amalgamated Association, May 28, p 16
mines, Gogebic, April 30, p 1
mines, Vermilion, April 9, p 1
mining in the North of England, New sliding scale in, May 14, p 17
news, Southern, Jan. 8, p 16
ore and fuel in our blast furnaces, May 21, p 16
ore districts, Canadian, Jan. 22, p 9
ore fields in Canada, New, Jan. 15, p 13
ore in 1884, Shipments of Lake Superior, Jan. 29, p 14
ore, Our imports of, Feb. 26, p 17
ores of Elba, May 14, p 1
plant, Unfortunate, April 16, p 19
producing center, Birmingham, Ala., as an, March 12, p 16
Purification of water by, April 23, p 15
rails bought as steel, June 4, p 37
region, Salisbury, Feb. 5, p 9; March 26, p 1
shipbuilding, Beginnings of, Feb. 5, p 33
Situation in, Jan. 15, p 16
specialties, May 7, p 5
steamers, Life of, Jan. 29, p 21; April 9, p 33
trade and the daily press, March 19, p 18
trade in France, Basic process and the, Feb. 12, p 30
trade, Railroad rates and the, June 11, p 16
trade romance, Jan. 22, p 15
vs. steel for locomotive fire-boxes, June 18, p 39
wain main, Rapid exterior corrosion of an, June 11, p 1
works, High-pressure boilers for, March 19, p 13
Ironmonger diary for 1885, Feb. 5, p 7
Ironwork and forges, May 28, p 13
Painting, June 25, p 27
Irregularities, Custom-house, March 26, p 31
Is water-gas dangerous? March 26, p 1
Isoschometric photography, June 18, p 17
Italy, New gun works in, Feb. 5, p 11
Ives sash lock, June 25, p 31
Japan, Coal in, March 5, p 37
United States and, June 25, p 31
Japanese dental instruments, Feb. 5, p 7
Jefferson Iron Works, April 2, p 43
Jenks' cord grip, April 9, p 31
Jewett's New Era water cooler, March 26, p 31
Johnston hydraulic mine pump, June 11, p 26
Jones, B. F., president American Iron and Steel Association, Feb. 19, p 1
Journal bearings, Anti-friction, Jan. 22, p 13
Judson Mfg. Co., Feb. 5, p 17
Judson's automatic fire-alarm, Feb. 5, p 15
Jungbluth lawn and street sprinkler, May 14, p 37
Keystone double bench wringer, April 9, p 31
Kilns at Boxholm, Sweden, Charcoal burning in, March 12, p 5
Knab furnace, June 11, p 35
Knife grinder, Mower, April 30, p 31
Knife sharpener, Corundum, Feb. 5, p 37
sharpeners, Perry's, Jan. 15, p 31
Knobs, New line of, April 23, p 31
Norwich screwless, May 28, p 81
L & G milk cans, April 9, p 31
Labels and trade-marks, Feb. 19, p 31
Labor and wages, American, Feb. 12, p 7
Bureau, Plans of the, March 26, p 23
in iron mills, and the Clapp-Griffiths process, March 5, p 22
Information on, May 16, p 17
outlook, Jan. 29, p 14
saving shoe machine, New, Feb. 5, p 19
situation West, Feb. 5, p 15; May 14, p 16; June 18, p 19
troubles at the Scranton Steel Works, May 16, p 23
troubles West, June 4, p 22
Labadre refrigerator, Feb. 19, p 31
Lackawanna Company, Burning of the rail mill of the, May 7, p 39
Ladder bracket, New, April 16, p 11
Lake Superior copper ore mines, Jan. 29, p 21
Superior copper mines in 1884, March 26, p 16
Superior iron-ore companies, Future policy of the, Jan. 1, p 21
Superior ship canal, Feb. 12, p 31
Lamps, History of, April 23, p 11
Landerhohn & Nelson self-closing boiler water-gauge, May 21, p 20
Large forging press, March 26, p 33
German lead works, Jan. 22, p 9
mine pumping engines, May 14, p 32
Largest dry-dock in the world, Jan. 8, p 23
emerald in the world, March 12, p 9
Latest developments in Chili, June 25, p 27
Latest advance in economical manufacturing, June 11, p 11
Lathes and milling machines, New tool for, May 21, p 25
Law, New postage, April 9, p 9
Laws, Conspiracy, March 5, p 22
Lawn and street sprinkler, Jungbluth, May 14, p 31
Lawn mower, Acme, Feb. 26, p 33
mower, Granite State, April 2, p 41
mower, Richmond Star, March 5, p 37
rake, Fox's, May 21, p 33
sprinkler, Hub, May 7, p 39
Lead and zinc fumes, Condensing, June 25, p 11
market, Course of the, June 25, p 16
works, Large German, Jan. 23, p 9
Leaky boiler tubes, May 21, p 34
Leavitt steam stamp at the Calumet and Hecla copper mines, June 11, p 1
Lehigh and Schuylkill districts, Cider in, April 30, p 27
Lemon squeezer, New, Jan. 8, p 31
Leonard refrigerator lock, April 2, p 41
Leveling sheet metals, Britton's machine for, May 7, p 19
Lever chain-testing machine, Improved, Feb. 5, p 19
Liability of principal for agent's acts, March 12, p 5
Life of iron steamers, Jan. 29, p 21; April 9, p 33
test of incandescent electric lights, June 11, p 25
Lighting copying press, May 21, p 32
Lights for lighthouses, Relative power of, Feb. 12, p 15
Lightships across the Atlantic, April 2, p 19
Line of knobs, New, April 23, p 31
of screw hooks, New, May 14, p 31
Liquefaction of oxygen, New process for the, June 25, p 32
Litigation, Burden Iron Co.'s, April 23, p 18
Little Giant adjustable screw-plate, New, Feb. 5, p 37
Jewel door check and bumper, May 21, p 33
Liverpool and Manchester Railway, Share certificate of the original, May 14, p 9
Lock, New gravity, June 18, p 33
Locking machine, Automatic, Jan. 29, p 25
Locomotive, Electric, April 23, p 33
Locomotive engine running and management, April 16, p 15
fire-boxes, iron vs. steel for, June 18, p 39
Some links in the history of the, Jan. 22, p 1
Locomotives, Syphon exhaust for, June 4, p 10
Loose pulley arrangement, Cresson, June 4, p 17
Louisville market, Jan. 1, p 27; 8, p 23; 15, p 23; 22, p 21; 29, p 26; Feb. 5, p 29; 12, p 20; 19, p 23; 26, p 23; March 5, p 29; 12, p 23; 19, p 25; 26, p 23; April 2, p 33; 9, p 23; 16, p 23; 23, p 25; 30, p 25; May 7, p 31; 14, p 23; 21, p 25; 28, p 23; June 4, p 29; 11, p 23; 18, p 25; 25, p 23
Low-price band-saw machine, New, Jan. 8, p 31
price of pig iron, Jan. 22, p 29
silicon Bessemer steel, April 16, p 19
Lubricating oils, Jan. 15, p 11
Lumber mills, Band-saws in, June 25, p 33
Machine for leveling sheet metals, Britton's, May 7, p 19
for mixing molting sand, Jan. 15, p 1
Gun, Hotchkiss, Feb. 5, p 19
Gun, Maxim, June 25, p 1
New band-saw, March 19, p 7
New coal-separating, June 11, p 25
New punching, Feb. 12, p 29
New punching and shearing, April 2, p 7
Riveter, Feb. 12, p 29
tools, June 11, p 27
Wood-boring, April 30, p 31
New milling, Feb. 26, p 33
Machinery builders, Prospect for, March 12, p 27
Complexity in, April 2, p 19
Crushing, April 16, p 9
outgrows original calculations, How, April 23, p 18
Magic mirrors of Japan, Another explanation of the, Feb. 19, p 13
Magnesia from sea-water, Manufacture of, April 2, p 27
Magnesium, Cheap, Feb. 19, p 13
Magnetic ore dressing, Jan. 1, p 1; April 9, p 1
Making heavy guns at South Boston, April 23, p 31
sea-water potable, June 4, p 38
steel plates, Novel method of, March 12, p 15
Malleable cast iron, Physical tests of, April 9, p 1
iron hinge pipe vice, Jan. 1, p 35
iron lifting jack, Colt's, Feb. 5, p 37
Manchester Works to be sold, Jan. 22, p 7
Manganese deposit, Sand gravel, March 12, p 11
estimation of, June 25, p 11
mine, Crimora, April 2, p 15
Manual for architectural ironwork, March 19, p 33
Manufacture of Bowling and Low Moor plates, Feb. 12, p 21
of iron and compound armor plates, May 7, p 21; 21, p 37
of liquid gunpowder, March 12, p 31
of magnesia from sea-water, April 2, p 27
of oxygen, June 18, p 17
Manufacturers' defeat, Causes of the, June 25, p 16
In session, Canadian, Jan. 29, p 25
Manufacturing, Conditions of success in, Feb. 26, p 11
site, New London, Conn., as a, June 18, p 9
Marchese electrolytic process, June 18, p 11
Marking gauge, Rotary, May 16, p 31
Married women, Contracts of, Feb. 26, p 7
Maurice fire-damp indicator, May 14, p 31
Maxim machine gun, June 25, p 1
McDaniel, the late Delaplanche, Feb. 5, p 11
McDaniel's auction fitting for steam-pipes, April 2, p 27
Meat and fruit press, Whitney's, March 12, p 31
Meeting of the Board of Managers of the American Iron and Steel Association, Jan. 15, p 32
of the Iron and Steel Institute, May 21, p 19
Melting steel scrap in a cupola, April 30, p 15
Mersey, Tunnel under the, March 12, p 11
Metal-bottom rink skate, June 11, p 31
market, Jan. 1, p 25; 8, p 21; 15, p 21; 22, p 19; 29, p 21; Feb. 5, p 27; 12, p 19; 19, p 23; 26, p 23; March 5, p 27; 12, p 21; 19, p 23; 26, p 21; April 2, p 31; 9, p 21; 16, p 23; 23, p 21; 30, p 21; May 7, p 29; 14, p 21; 21, p 23; 28, p 21; June 4, p 27; 11, p 21; 18, p 23; 25, p 21
market for 1884, Annual review of, Jan. 1, p 9
railway stocks, Jan. 22, p 13
work, Decorative, Feb. 9, p 7
working tools and machinery, March 26, p 15
Metallic planer, Meriden Malleable Iron Company's, Jan. 29, p 29

- Metallic shingles, Montross' patent, April 2, p. 19
Metals at New Orleans, Virginia, Jan. 29, p. 30
Our precious, Jan. 22, p. 31
Metallurgical notes, Jan. 1, p. 15; p. 15; p. 29, p. 31;
Feb. 5, p. 12; p. 12; p. 19; p. 26; p. 15; March 5,
p. 27; May 7, p. 14; p. 17; June 4, p. 1;
11, p. 35; 18, p. 11; 25, p. 11
Method for analyzing coal gas, New, March 12,
p. 15
to determine specific gravity of coke, Jan.
1, p. 1
Mexican indebtedness, Jan. 15, p. 16
tariff changes, June 25, p. 25
West Coast trade, Jan. 22, p. 30
Mexico, Commercial relations with, Feb. 5, p. 13
Railway progress in, Jan. 22, p. 9
Stamp taxes in, Jan. 29, p. 7
Mild steel for naval and military purposes,
March 5, p. 1
steel railroad ties, June 4, p. 17
Milk cans, L. & G., April 9, p. 31
Milling machine, Liot's Universal, April 23,
p. 33
machine, Slabbing and key-seat, Jan. 22,
p. 25
machines, New, Feb. 26, p. 33
Mine pump, Johnston hydraulic, June 11, p. 25
Mines of the Minnesota Iron Company, April
23, p. 33
Mineral production of the United States, June
25, p. 16
statistics for 1883, French, June 4, p. 33
Mining machinery in Siberia, American, Feb.
5, p. 17
machinery, Stealing, Jan. 29, p. 29
Minnesota Iron Company, Mines of the, April
23, p. 33
Mistaken propheta, May 7, p. 35
Miter-box, Universal, June 4, p. 37
Model fast cruiser, March 5, p. 13
Modern architecture, Iron in, Jan. 1, p. 1
automatic sprinklers, June 18, p. 5
brass work, March 5, p. 21
Moisture on coal, Influence of, Jan. 29, p. 13
Molder, Four-sided, June 4, p. 17
Molding machine, Pneumatic, April 9, p. 18
sand, Machine for mixing, Jan. 15, p. 11
sand, New source of, June 11, p. 11
Monitor turret, in the, April 2, p. 43
Mons Canal, Hydraulic lift on the, March 12,
p. 24
Mother-of-pearl in Tabiti, May 14, p. 33
Movement, New industrial, Feb. 5, p. 1
Moving cars, Telegraphing from, Feb. 19, p. 13
Mower knife grinder, April 30, p. 31
Mr. Randall and protection, Jan. 15, p. 17
Mutual fire insurance, March 26, p. 11
Nail box, Folding, April 2, p. 41
making in California, March 19, p. 34
mills West, Strike in the, June 4, p. 23
situation, April 2, p. 26
strike in the West, June 25, p. 17
Nails in the West, Advance in, Jan. 29, p. 14
wire, April 16, p. 9
Nailers and the Amalgamated Association,
April 23, p. 17
Natural gas at Pittsburgh, Jan. 1, p. 31
gas at Pittsburgh, Explosion of, Feb. 5, p.
23
gas, Dangers of, Feb. 26, p. 13
gas explosions, Feb. 5, p. 38
gas for pickling, Jan. 1, p. 37
gas, Heating power of, May 28, p. 33
gas in Pittsburgh iron and steel mills, April
2, p. 37
gas in puddling, June 4, p. 5
gas, Use of, June 18, p. 39
gas wells, Feb. 12, p. 21
gas wells of Northwestern Ohio, June 25,
p. 32
Naval and military purposes, Mild steel for,
March 5, p. 1
Navy, English, June 11, p. 31
German, Feb. 12, p. 23
ordnance, New, June 18, p. 37
Needle bay-knife, Carter's, June 25, p. 31
New England exhibition company, Collapse of
a, Jan. 1, p. 25
Inventions, Jan. 1, p. 7; 15, p. 5; Feb. 5, p.
21; March 5, p. 9; May 21, p. 27
London, Conn., as a manufacturing site,
June 18, p. 9
Orleans Exposition, Jan. 1, p. 17
Orleans Exposition, Notes of the, March
36, p. 17; April 2, p. 19; 9, p. 27
Orleans, Huge silver brick at, Jan. 1, p. 37
South Wales, Coal fields of, June 11, p. 13
South Wales, Steel manufacture in, March
5, p. 7
York Chamber of Commerce on tariff mat-
ters, Jan. 15, p. 13
York harbor, Improving, April 16, p. 33
York iron market, Jan. 1, p. 26; 8, p. 21; 15,
p. 21; 22, p. 19; 29, p. 20; Feb. 5, p. 28; 12,
p. 20; 19, p. 22; 26, p. 22; March 5, p. 28;
12, p. 21; 19, p. 24; 26, p. 22; April 2, p. 32;
9, p. 22; 16, p. 24; 23, p. 22; 30, p. 22; May
7, p. 30; 14, p. 23; 21, p. 24; 28, p. 22; June
4, p. 23; 11, p. 23; 18, p. 24; 25, p. 22
York shipbuilding renaissance, Feb. 5, p.
13
York State, Prison labor in, March 5 p. 11
Nicaragua Canal survey, Jan. 1, p. 20
Nobert's ruling machine, April 2, p. 7
North Chicago Rolling Mill Company, Jan. 8,
p. 21
Chicago Rolling Mill, Resuming work at
the, Jan. 15, p. 17
Northwestern Ohio, Natural gas wells of, June
25, p. 32
Norwich screwless knobs, May 28, p. 31
Notes of the New Orleans Exposition, March
26, p. 17; April 2, p. 19; 9, p. 27
superheated, Yellow metal, Jan. 22, p. 9
Novel application of the diving dress, March
5, p. 13
method of marking steel plates, March 12,
p. 15
primary battery, Jan. 29, p. 7
protection to ships, June 11, p. 25
tube vise, March 26, p. 9
Nystrom's high-speed engine and governor,
Feb. 5, p. 17
Obituary, Jan. 8, p. 17; 15, p. 17; 22, p. 30; Feb.
5, p. 23; March 5, p. 38; 19, p. 19; April
16, p. 19; 30, p. 17; May 14, p. 17
Obstructions in gun barrels, Effects of, Feb. 5,
p. 19
Occupations of our people, March 26, p. 1
Odorous hollow-ware, March 19, p. 29
Ohio, Coal and iron-ore production of, April
23, p. 9
prison, Piece-price system for an, Feb. 26,
p. 1
well drilling machine, Jan. 15, p. 27
Oil wells in Wyoming Territory, Jan. 1, p. 7
wells, Torpeding, April 2, p. 15
Old steel rails, Working, Jan. 22, p. 31
Oliver Bros. & Phillips' extension, Jan. 29,
p. 7
Bros. & Phillips, Suspension of, Jan. 22,
p. 30
Bros. & Phillips, Troubles of, Jan. 22, p. 15
Wire Mill, Pittsburgh, Dispute at the,
March 12, p. 18
One partner to sue another, Right of, June 4,
p. 23
telegraph wire, Seventy-two simultaneous
messages over, March 19, p. 1
Open-hearth steel in Great Britain, May 14, p. 1
Operations of the Patent Office in 1884, Feb. 12,
p. 31
Ordance, New navy, June 18, p. 37
Ore deposits, Coe Hill, June 4, p. 13
dressing, Magnetic, Jan. 1, p. 1; April 9, p. 1
Organization, New tariff, Jan. 22, p. 13
Origin of thunder storms, Feb. 19, p. 37
Oscillating engine, New, June 18, p. 37
Our precious metals, Jan. 22, p. 31
Outbursts of carbonic acid in collieries, June 4,
p. 38
Outlawed debts and accounts, April 2, p. 26
Outlook for business, Wheat and the, June 18,
p. 18
for copper, May 28, p. 25
Labor, Jan. 29, p. 15
Oven, Improved hot-blast, for the Shelby Iron
Company, Alabama, June 15, p. 1
Oxidation of copper, Jan. 1, p. 1
of metals and the Bower-Barff process,
June 11, p. 1
Oxygen, Manufacture of, June 18, p. 17
Ozone and the cholera, March 12, p. 27
Color of, Jan. 29, p. 5
Packing-box strap, March 26, p. 31
Painting ironwork, June 25, p. 27
Panaceas for all ills, Harvests are not, Jan. 22,
p. 13
Paris, bronze casting in, June 18, p. 33
Projected Boudais tower at, June 18, p. 9
Partnerships, Fictitious names in, April 23, p. 17
Passenger pool and a clearing house, Jan. 15,
p. 9
Past and future, Jan. 1, p. 20
year's shipbuilding on the Clyde, Jan. 15,
p. 11
Patent draw shave, Robinson's, June 18, p. 38
fuel for blast furnaces, April 9, p. 5
metallic vice flange, Jan. 22, p. 29
Office, German, March 12, p. 31
Office in 1884, Operations of, Feb. 12, p. 31
reissues, New points relative to, Jan. 8,
p. 16
Patents, April 16, p. 9
reissues of, Feb. 5, p. 22
reissues of, Jan. 22, p. 11
Pattern tin shingles, April 16, p. 33
Pattern well wheel, New, June 11, p. 31
Pedestal, Statue of Liberty, June 18, p. 7
tenoner, June 4, p. 38
Pelton's expanding reamer, May 7, p. 13
Pennsylvania slate trades, March 19, p. 29
People, Occupations of our, March 26, p. 1
Periods of depression compared, Jan. 29, p. 14
Perkins door check, May 7, p. 39
Petroleum for boiler scales, June 18, p. 17
Gas and, in Manitoba, Feb. 5, p. 24
in bulk, Transportation of, May 21, p. 27
is quarried in Alsace, Germany, How, Feb.
12, p. 31
Philadelphia market, Jan. 1, p. 26; 8, p. 22; 15,
p. 22; 22, p. 20; 29, p. 20; Feb. 5, p. 28;
12, p. 20; 19, p. 22; 26, p. 22; March 5,
p. 28; 12, p. 22; 19, p. 24; 26, p. 22; April
2, p. 32; 9, p. 22; 16, p. 24; 23, p. 22; 30,
p. 22; May 7, p. 30; 14, p. 23; 21, p. 24; 28,
p. 22; June 4, p. 23; 11, p. 23; 18, p. 24;
25, p. 22
Philadelphia Mint, Work of the, Jan. 8, p. 31
Technical School, Jan. 15, p. 31
Philosophical instruments, Feb. 12, p. 33
Phosphates from basic process slag, March 5,
p. 5
Phosphoric pig iron, Treatment of, Feb. 5, p. 1
Photography, Isochromatic, June 18, p. 5
Physical properties of iron and steel as in-
fluenced by temperature, April 9, p. 1
tests of malleable cast iron, April 9, p. 1
Pickling, Natural gas for, Jan. 1, p. 37
Piece-price system for an Ohio prison, Feb.
26, p. 1
Pig and ore process, March 26, p. 17
Cinder, Jan. 29, p. 9
iron, American Scotch, March 26, p. 17
iron, Better outlook for, Jan. 22, p. 15
iron, Business and manufacture of Besse-
mer in the West Cumberland district of
England, April 9, p. 17
iron district, Comparison of, March 19, p. 18
iron in Austria-Hungary, Production and
consumption of, April 2, p. 21
iron in three countries, Annual production
of, Feb. 26, p. 16
iron in 1884, Production of, Feb. 12, p. 14
iron, Low price of, Jan. 22, p. 29
Pile sinking, Water jet in, Feb. 5, p. 38
Pioneer rail manufacturers' good fortune, Jan.
29, p. 29
Pipe crimper, Wheeler's Lightning, April 30,
p. 31
line, Soudan, March 26, p. 31
vise, Economy, March 12, p. 31
vise, Malleable iron-hinge, Jan. 1, p. 35
wrench, Climax, Feb. 26, p. 33
wrench, Huntington, March 26, p. 31
wrench, New, Feb. 5, p. 37
Pipes and tubes, Improved tool cutter for, Jan.
22, p. 9
Pittsburgh iron and steel mills, Natural gas in,
April 2, p. 37
market, Jan. 1, p. 29; 8, p. 22; 15, p. 22;
22, p. 20; 29, p. 20; Feb. 5, p. 31; 12, p. 23;
19, p. 21; 26, p. 22; March 5, p. 28; 12,
p. 22; 19, p. 24; 26, p. 22; April 2, p. 32;
9, p. 21; 16, p. 24; 23, p. 22; 30, p. 22; May
7, p. 30; 14, p. 23; 21, p. 24; 28, p. 22;
June 4, p. 23; 11, p. 23; 18, p. 24; 25, p. 22
New Clapp Griffiths plant at, April 16, p. 19
New Clapp Griffiths steel plant at, March
12, p. 1
Plan for a Bessemer converting-house without
a casting-pit, March 19, p. 1
Plane, Meridian Malleable Iron Company's
metallic, Jan. 29, p. 29
Planer and smoother, June 4, p. 17
chuck, Porter's, May 21, p. 35
New buzz, March 19, p. 9
Plans of the Labor Bureau, March 26, p. 23
Plant and processes, Jan. 15, p. 1; 29, p. 31;
Feb. 5, p. 12; p. 30; 26, p. 15; March 5,
p. 5; 12, p. 15; 19, p. 17; April 9, p. 5; 23,
p. 27; May 7, p. 41; 14, p. 17; June 11,
p. 35; 18, p. 11; 25, p. 11
Plate glass casting, Feb. 5, p. 33
Pneumatic hammers, March 26, p. 15
molding machine, April 9, p. 18
tubes, Removing obstructions from, March
19, p. 15
Points relative to patent reissues, New, Jan. 8,
p. 16
relative to trade-marks, New, April 16, p. 18
Pole caps and stake irons, June 25, p. 31
Portable and traction farm engines, June 11,
p. 27
electric-light plant, April 30, p. 1
sugar-maker's arch, March 19, p. 33
Porter's planer check, May 21, p. 35
Position of bituminous coal in the Eastern and
Middle States, Feb. 12, p. 14
of tin, March 5, p. 22; May 21, p. 18
of tin plates, Feb. 12, p. 15
Postage law, New, April 9, p. 9
Power punching presses, New, June 4, p. 1
regenerator for pumping engines, April 23,
p. 31
Practice, Dangerous, March 12, p. 9
Pravati, Avesta process at, March 19, p. 17
Preparation of building blocks from furnace
slags, March 5, p. 5
Present aspect of tin-plate making in America,
April 9, p. 7
Preserving processes for timber, June 18, p. 15
Press, New tool grinder and, Feb. 19, p. 31
Skein-box, Jan. 22, p. 29
Whitney's meat and fruit, March 12, p. 31
Presses and hydraulic machinery, Feb. 12, p. 33
Foot and power, April 16, p. 9
Improved hydraulic, Feb. 12, p. 1
Punch and power, May 21, p. 29
Pressure, Hardening steel by, May 14, p. 11
reducer, Best pump and, Jan. 29, p. 30
Price of food, Decline in the, Feb. 5, p. 33
Prices, English rail, Jan. 29, p. 33
Fall in, since 1875, March 19, p. 13
Slashing, Feb. 5, p. 23
Primary battery, Novel, Jan. 29, p. 7
Prison labor in New York State, March 5, p. 11
Privateering, April 16, p. 18
Process, Avesta, Avesta, p. 26
Clapp-Griffiths, Feb. 26, p. 16; April 30, p.
17; June 25, p. 17
for hardening plaster, New, May 28, p. 1
for the manufacture of oxygen, New, June
25, p. 32
Pig and ore, March 26, p. 17
Process, Walrand, June 11, p. 35
Production and consumption of pig iron in
Austria-Hungary, April 2, p. 21
and consumption of rails, Feb. 19, p. 16
and profit on gas, Cost of, March 19, p. 29
of coal in Great Britain, April 2, p. 21
of iron and steel, Consumption of iron ore
and fuel in the, 1884, May 21, p. 9
of iron and steel in Germany in 1883, Feb.
19, p. 9
of pig iron in 1884, Feb. 12, p. 14
Professor Tyndall on electricity, March 19, p. 15
Profits, Wages and, Jan. 22, p. 14
Progress of the basic process, Jan. 8, p. 17
of the Eads ship railway, Jan. 22, p. 15
Projected Boudais tower at Paris, June 18,
p. 9
Propelling a canal-boat by air, March 26, p. 23
Proprietor, Bomber's, May 21, p. 20
Prophecy of revival, Iron and Steel Associa-
tion's, Feb. 26, p. 16
Prophecy, Mistaken, May 7, p. 35
Proposed Siberian railway, March 5, p. 37
Prospect for machinery builders, March 12,
p. 27
Prospects in the building trades, May 7, p. 17
Protection, Mr. Randall and, Jan. 15, p. 17
Puddling, Natural gas in, June 4, p. 15
Pump without valves, June 25, p. 32
Pumps, Improvements in, Feb. 5, p. 37
Pumphig engines, Compound accumulator,
April 23, p. 1
engines, Large mine, May 14, p. 32
engines, Power regenerator for, April 23, p.
31
machinery, Economy and duty of, Ameri-
can, Feb. 26, p. 1
Punch and power presses, May 21, p. 29
holder, Swing mandrel or, March 12, p. 11
Punching and shearing machine, New, April 2,
p. 7
machine, New, Feb. 12, p. 29
presses, &c., March 26, p. 16
presses, New power, June 4, p. 1
Purdy's Gate Works, March 12, p. 25
Purification of water by iron, April 23, p. 15
of water by oxygen, March 26, p. 21
Pyrites, Composition of the gas-ens products
of combustion of, Feb. 12, p. 30
Quality guarantees for tin plates, May 7, p. 24
of American steel rails, Feb. 12, p. 15
Queen Anne bicycle lamp, April 30, p. 31
Quicksilver product, California, Feb. 5, p. 37
Rail blooms, Heating, April 23, p. 27
mill engines, English, Jan. 29, p. 1
prices, English, Jan. 29, p. 33
Rails in Germany, Cost of, March 26, p. 15
production and consumption of, Feb. 19,
p. 16
switches, frogs, &c., Jan. 22, p. 30
wear of, June 18, p. 37
Railroad accidents abroad, April 9, p. 32
bridge inspection, May 14, p. 16
rates and the iron trade, June 11, p. 16
receiverships in 1884, March 5, p. 13
ties, Mild steel, June 4, p. 17
work, Fast, April 2, p. 43
Railroads built in 1884, New, Jan. 8, p. 31
Electricity on, Jan. 8, p. 3
of the world, March 5, p. 17
Railway forecasts in 1884, Jan. 22, p. 5
progress in Mexico, Jan. 22, p. 9
sleepers, Metal, Jan. 22, p. 13
Raising the hull of the St. John, Feb. 19, p. 9
Lake, New, March 12, p. 31
Rapid exterior corrosion of an iron water main,
June 11, p. 5
Transit wrench, Feb. 19, p. 31
Ratchet-drill patent, June 18, p. 15
Reading, Bill filed to foreclose, Jan. 8, p. 27
Reagan transportation bill, Jan. 15, p. 15
Reasons for rejecting the Spanish treaty, Jan.
22, p. 14
Receiver's Value of, May 21, p. 18
Receivership, Denying a, March 12, p. 27
Receivership in 1884, Railroad, March 5, p. 13
Recent advances in electrical science, Feb. 12,
p. 1
foreign news, Jan. 22, p. 30
progress in engineering, April 16, p. 11
tests with the dynamite gun, April 2, p. 41
Recording aneroid barometer, May 7, p. 13
Reduction of wages in iron mills, March 19,
p. 30
Proposed wages, West, Jan. 29, p. 15
Reductions, Wages, Jan. 29, p. 15
Reel, Clothes, June 4, p. 37
Refrigerator, Refrigerator, Feb. 19, p. 31
lock, Leonard, April 2, p. 41
Regenerative gas furnace, Improved, Feb. 5,
p. 23
hot-blast oven, New, May 21, p. 1
Refining of copper, Electrolytic, May 4, p. 41
Refrigerator, Steam and fire, March 19, p. 33
Registered patents, Feb. 5, p. 22
Reissues of patents, Jan. 22, p. 11
Relative power of lights for lighthouses, Feb.
12, p. 15
Removal of the headquarters of the Western
Nail Association, April 30, p. 16
Removal of obstructions from pneumatic tubes,
Feb. 19, p. 15
Report of the New York State Survey for the
year 1884, Feb. 26, p. 7
of the United States Commissioner of Fish
and Fisheries for 1882, Jan. 15, p. 9
on the Dolphin, June 25, p. 9
Rescision of an iron contract, June 11, p. 13
Resistance of cast and wrought-iron columns to
fire, June 18, p. 17
Resolution, Advancing prices by, June 4, p. 22
Resources of Alaska, Jan. 29, p. 1
Results of the French bounty system, Feb. 26,
p. 33
Resuming work at the North Chicago Rolling
Mill, Jan. 15, p. 17
Richmond Star lawn mower, March 5, p. 37
Right of one partner to sue another, June 4, p. 23
to remove fixtures, May 28, p. 16
to rescind from contracts, May 7, p. 24
Risk skate, meta-bottom, June 11, p. 31
Ripping plane, New gauge, May 14, p. 31
Rising of steel during rolling, March 12, p. 15
Rival Boston exhibitions, Jan. 22, p. 15
Riveted joints, Strength of, May 28, p. 1
Riveting machine, Feb. 12, p. 29
Robinson's patent draw shave, June 18, p. 33
Rock drills, Improvement in, May 14, p. 31
Roller skate, Derby, May 21, p. 33
skate, Extension, April 9, p. 31
skate, Waltham, June 4, p. 37
skates, Boxwood for, April 2, p. 27
Romania, Iron trade, Jan. 22, p. 15
Rope factory in China, New, Jan. 22, p. 3
Rotary marking gauge, May 16, p. 31
sitting shears, June 18, p. 39
ventilating fans, June 11, p. 27
Round, square and flat bar iron, Weight of,
April 23, p. 11
Rounds, H. flows and, March 26, p. 31
Rubber belting, New, March 26, p. 31
Rulling machines, Noter's, April 2, p. 7
Russell Wheel and Foundry Company, Feb. 12,
p. 33
Russia, Our trade with, April 2, p. 27
Russian English war, Effect of a, April 30, p. 16
Safeguard against collisions with icebergs, June
18, p. 17
Safety barb-wire fence guard, March 5, p. 37
of the elevated railway, March 12, p. 15
Sale of an historic estate, June 18, p. 15
Sales on the installment plan, Feb. 5, p. 22
Warranty in, March 12, p. 16
Salesmen with unlimited powers, Jan. 22, p. 14
Salisbury iron region, Feb. 5, p. 9; March 26,
p. 5
San Francisco, Electrical railroad for, April 30,
p. 27
Sanitary engineering, Instruction in, June 11,
p. 27
Sardinian manganese deposit, March 12, p. 11
Sash lock and window noller, April 2, p. 41
lock, Ives, June 25, p. 31
Savings' banks deposits, Taxation of, March 19,
p. 29
Saw-horse heads, Jan. 29, p. 29
Saw-set and vice, Coxhead's combined, April
23, p. 31
Scale beams, Feb. 12, p. 33
convention of the Amalgamated Associa-
tion, April 23, p. 16
Science, High, May 7, p. 17
Scissors sharpener, Emery's Improved, May 7,
p. 30
Scotch, Virginia pig compared with, Jan. 3,
p. 39
Scranton Steel Works, Labor troubles at the,
May 16, p. 23
Screen-door corners, June 4, p. 37
driver, Ellrich ratchet, April 2, p. 41
hooks, New line of, May 14, p. 31
machines, Improved, May 21, p. 20
shafts, Broken, April 23, p. 5
Scroll saw, Emery, March 5, p. 37
saw, Victor, Jan. 15, p. 31
Sea telegrams, April 30, p. 18
water potable, Making, June 4, p. 38
Seaboard coal trade, New competition for, Jan.
22, p. 1
Seamless steel tubes, April 2, p. 17
Secondary battery, New, June 18, p. 17
Self-closing boiler water-gauge, The Lander-
holm & Nelson, May 21, p. 20
Self-contained electric lamp, May 21, p. 27
Selling below cost of production, March 26, p. 16
Separating tin from tin plate, Jan. 15, p. 1
Serious blunder in the new tariff, Jan. 15, p. 17
Seventy-two simultaneous messages over one
telegraph wire, March 19, p. 1
Shaping machine, Heavy, May 28, p. 1
machines, Special attachment for, March 5,
p. 21
Share certificate of the original Liverpool &
Manchester Railway, May 14, p. 9
Sharpener, Emery's improved scissors, May 7,
p. 30
Sheet-iron mills, Breakage of rolls in, Feb. 26,
p. 7
Sheet metal-working machinery, May 28, p. 13
Shelfed gun forgings and the Government,
Jan. 1, p. 35
steel for heavy ordnance, April 2, p. 41
Shingles, Montross patent metallic, April 2, p. 19
Ship canal, Lake Superior, Feb. 12, p. 31
Ships, Novel protection to, June 11, p. 25
Temporary repairs of, Feb. 12, p. 5
Shipbuilding, Jan. 29, p. 15
in Great Britain, Jan. 1, p. 1; 22, p. 30
on the Clyde, Past year's, Jan. 15, p. 11
reminiscences, New York, Feb. 5, p. 13
Shipments of Lake Superior iron ore in 1884,
Jan. 29, p. 14
Shipyards, San Francisco, Work on the new,
Jan. 29, p. 14
Shoe machine, New labor-saving, Feb. 5, p. 19
trade, Arbitration in the, April 2, p. 11
Shutter worker, New, June 11, p. 31
Siberia, American mining machinery in, Feb.
5, p. 17
Siberian railway, Proposed, March 5, p. 37
Sidney Gilchrist Thomas, Feb. 26, p. 17
Siemens system of gas firing as applied to boil-
ers, New, Feb. 26, p. 1
Sitter, Barler, April 30, p. 31
Silicious bronze for telegraph wires, Jan. 29,
p. 5
Silver coinage, March 5, p. 22
coinage, Compulsory, Feb. 5, p. 22
dollar, March 19, p. 19
vs. gold, March 19, p. 18
Simple method of analyzing coal gas, Jan. 29,
p. 5
Simplex tin-plate pickling machine, June 4, p.
11
Sirius and Great Western, Feb. 26, p. 17
Situation in iron, Jan. 15, p. 16
Nail, April 2, p. 26
West, Labor, Feb. 5, p. 15
Sizes of chimneys, Table of, Jan. 29, p. 13
Skate, Harvard roller, Feb. 26, p. 33
Skein box press, Jan. 22, p. 29
Skilled labor in English shipyards, Wages for,
March 5, p. 38
Slabbing and key-seat milling machine, Jan. 22,
p. 25
Slag cement, Feb. 19, p. 15
Slashing prices, Feb. 5, p. 23
Slate trade, Pennsylvania, March 19, p. 29
Sliding door lock, Stearns', May 28, p. 31
scale for coal and freight, Jan. 8, p. 16
scale in iron mining in the North of Eng-
land, New, May 14, p. 17
Slight concession on coal, Jan. 22, p. 31
Slitting shears, Rotary, June 18, p. 39
Small Bessemer plant, New design for a, May
28, p. 31
dowel machine, June 4, p. 17
stationary converters, Feb. 12, p. 14
Smelting, Copper, in the West, Jan. 29, p. 13
Smith suspension carriage-wheel, May 16, p. 31
Smoother, Planer and, June 4, p. 17
Smyth process again, March 26, p. 1
Snap-hook, Armstrong's improved, April 2,
p. 41
Snatch block, Improved, March 12, p. 31
Solar heat, Cause of, Jan. 29, p. 11
Some links in the history of the locomotive,
Jan. 22, p. 1
Soudan pipe-line, March 26, p. 31
Source of molting sand, New, June 11, p. 11
South Africa, Diamonds in, May 28, p. 15
American trade prospects, June 4, p. 22
Boston, Making heavy guns at, April 23,
p. 31
Chester, Pa., New industry at, Jan. 22, p. 5
Southern enterprise, Specimen of, Jan. 8, p. 23
Iron news, Jan. 8, p. 15
Foundry and Machine Company, March 12,
p. 9
Spain, Zinc works in, Jan. 15, p. 27
Spanish copper companies, May 14, p. 16
treaty, Reasons for rejecting the, Jan. 22,
p. 14
Special attachment for shaping machines,
March 5, p. 21
machinery, April 16, p. 9
overland contracts abolished, Jan. 15, p. 16
Specific gravity of coke, Method to determine,
Jan. 1, p. 1
Specimen of Southern enterprise, Jan. 8, p. 23
Speculation, Commercial exchanges and, Jan. 1,
p. 20
Sperry's knife sharpener, Jan. 15, p. 31
Spontaneous combustion of bituminous coal,
Jan. 8, p. 31
Spring butts, Improvement in, Feb. 5, p. 37
piston packing, Flanders', April 23, p. 15
wheel for traction engines, New, May 21,
p. 35
Sprinkler head, Tin, April 23, p. 31
Square-hole auger, March 19, p. 29
Squeezing, New iron, Jan. 8, p. 31
St. John, Raising the hull of the, Feb. 19, p. 9
Lawrence route, Erie Canal and the, June
18, p. 18
Louis, Cable-road contracts at, Jan. 29, p. 21
Stagnant trade, Cause of and remedy for, Jan.
1, p. 29
Stake irons, Pole caps and, June 25, p. 31
Stamp taxes in Mexico, Jan. 29, p. 7
Standard door hanger, June 4, p. 37
method of steam-bolter trials, May 14, p. 5
Squaring, Portable engine, June 11, p. 27
Stationary converters, Small, Feb. 12, p. 14
steam engines for electric-lighting pur-
poses, March 12, p. 31
Statistics, Concerning, June 25, p. 16
of American iron and steel production in
1884, May 28, p. 16
of transportation, Feb. 5, p. 19
Statue of Liberty pedestal, June 18, p. 1
Status of the strike in the Western mills, June
11, p. 17
Stave, heading and barrel machinery, May 7,
p. 40
Stay-bolt iron, Test for, May 21, p. 9
Stealing mining machinery, Jan. 29, p. 30
Steam and fire regulator, March 19, p. 32
and hydraulic elevators, Comparative ef-
ficiencies of, Feb. 12, p. 1
as an aid to the combustion of fuel on
grate-bars, April 23, p. 1
boiler trials, Standard method of, May 14,
p. 5
cars, Bay windows on, Jan. 29, p. 30
crane, 35-ton, April 9, p. 1
Hydraulic machinery vs., April 30, p. 1
making, or boiler practice, April 16, p. 15
using, or steam-engine practice, May 14, p. 7
Steamboating, Chronology of, Feb. 19, p. 7
May 21, p. 33
Stearns' sliding door lock, May 28, p. 31
Steel and its rolling qualities, High-phos-
phorus, March 5, p. 21
casting Bessemer plant, Jan. 22, p. 31
Cellular structure of, March 19, p. 17
Cold-rolled, March 12, p. 15
Condition of carbon in, Feb. 26, p. 15
during rolling, Rising of, June 18, p. 15
for iron, Substitution of, March 12, p. 15
for underground colliery purposes, Feb. 12,
p. 11
gates, June 11, p. 31
Henderson mold for casting, May 7, p. 15
High-phosphorus, and its rolling qualities,
March 12, p. 17
Ingots, Hard centers in, April 9, p. 1
instead of iron for card teeth, April 30, p. 1
Iron rails bought as, June 4, p. 37
manufacture in New South Wales, March
5, p. 7
nails and steel processes, March 26, p. 17
new consumption for, Jan. 8, p. 9
plow axle, Farmers', May 16, p. 31
press, Whitworth, May 7, p. 1
processes, Steel nails and, March 26, p. 17
production, Bessemer, Feb. 26, p. 16
rail, 80-pound, Feb. 5, p. 17
rail trade, April 9, p. 16
rock-drill, German, Jan. 29, p. 30
smoothing harrow, Buford's, Jan. 22, p. 7
tired wheels, March 12, p. 7
trade, American, Jan. 15, p. 16
tubes, Seamless, April 2, p. 17
works in the United States, New, June 18,
p. 39
vs. iron in the construction of steam boil-
ers, March 12, p. 1
Stevens Institute, June 25, p. 33
Stimulated emigration, March 26, p. 16
Stockport gas engine, May 14, p. 31
Stone and wood working machinery, March 12,
p. 9
Storage battery, Viaduct, April 9, p. 25
Strap, Packing-box, March 26, p. 31
Strength of crank shafts, March 5, p. 21
of riveted joints, May 28, p. 1
of the Amalgamated Association, April 16,

- Topmill variable and automatic cut-off gear, April 2, p 17
- Torpedo, Brennan, June 18, p 19
- Torpedoes of the Austrian navy, April 16, p 11
- Torpedoing oil wells, April 2, p 15
- Torsion balance, June 25, p 31
- Toughened filter paper, June 4, p 38
- Towel holder, New, April 2, p 41
- Traction engines, New spring-wheel for, May 21, p 35
- Trade, Foreign, Jan. 1, p 35
- marks, Label and, Feb. 19, p 31
- marks, New points relative to, April 16, p 18
- of Canada, June 4, p 17
- of the Dominion, Feb. 12, p 31
- of the Congo, March 12, p 17
- prospects, South American, June 4, p 22
- report, Jan. 1, p 25; 8, p 21; 15, p 21; 22, p 19; 29, p 19; Feb. 5, p 27; 12, p 19; 19, p 21; 26, p 21; March 5, p 27; 12, p 21; 19, p 23; 26, p 21; April 2, p 31; 9, p 21; 16, p 23; 23, p 21; 30, p 21; May 7, p 29; 14, p 21; 21, p 23; 28, p 21; June 4, p 29; 11, p 21; 18, p 23; 25, p 21
- Steel-rail, April 9, p 16
- with British India, Our, April 9, p 16
- with Colombia, Our, April 16, p 18
- with Russia, Our, April 2, p 27
- with Venezuela, April 23, p 17
- Trades union plan for convict labor, Jan. 8, p 31
- Traffic, Transcontinental, April 23, p 16
- Transmission of power by compressed air, Feb. 5, p 19
- Transportation bill, Reagan, Jan. 15, p 15
- interests, Freight, May 28, p 14
- of petroleum in bulk, May 21, p 27
- Statistics of, Feb. 5, p 19
- Treasury decisions on imports, June 4, p 9
- Treatment of argentiferous copper ores and mattes, June 11, p 35
- of burns, April 2, p 15
- of phosphoric pig iron, Feb. 5, p 1
- Treaty with Colombia, May 7, p 39
- Trenton engines, May 7, p 40
- Troubles, Hocking Valley, Jan. 8, p 33
- of Oliver Bros. & Phillips, Jan. 22, p 15
- Troubles West, Labor, June 4, p 22
- Tube vice, Novel, March 26, p 9
- Tug, Automotive, May 7, p 40
- Tunnel, Ancient, March 26, p 17
- under the Morey, March 12, p 11
- Tunnelling, Submarine, April 16, p 15
- under the Hudson River, April 16, p 15
- Twenty years with the indicator, June 18, p 35
- Twisted-wire box strap, March 26, p 31
- Two-track tricycle, Columbia, March 26, p 9
- Underground colliery purposes, Steel for, Feb. 12, p 11
- electric rail way, Jan. 29, p 30
- Unfortunate iron plant, April 16, p 19
- United States and Japan, June 25, p 31
- States, Mineral production of the, June 25, p 16
- States, New steel works in the, June 18, p 39
- Universal milling machine, Lot's, April 23, p 33
- miter-box, June 4, p 37
- Unlimited powers, Salesmen with, Jan. 22, p 14
- Use of coal cinder in construction, June 4, p 38
- of natural gas, June 18, p 39
- of wire for belting, Feb. 12, p 5
- Utilization of coal dust, March 26, p 32
- Utilizing the by-products in coking, April 2, p 41
- Value of coke, April 30, p 16
- of foreign coins, Jan. 8, p 31
- of receipts, May 21, p 18
- Valve patent suits decided, Jan. 22, p 30
- Valves and hydrants, May 7, p 40
- Blessing, Jan. 15, p 13
- Pump without, June 25, p 32
- Vapor burners, June 11, p 31
- Vaporization of phosphorus from cast iron, June 11, p 35
- Venezuela, Trade with, April 23, p 17
- Vermilion iron mines, April 9, p 9
- Vertical turret boring machine, 32-inch, April 30, p 27
- Vibrant storage battery, April 9, p 25
- Vibratory shocks, Crystalline structure in iron as the effect of, May 28, p 1
- Victor scroll saw, Jan. 15, p 31
- Virginia iron ores, Analyses of, Jan. 15, p 15
- metal at New Orleans, Jan. 29, p 30
- Virginia pig compared with Scotch, Jan. 8, p 33
- tin mines, Feb. 5, p 1
- Viscosimeter, Improved, Jan. 8, p 1
- Vise flange, Patent metallic, Jan. 22, p 29
- I. I. & B. Co., Jan. 22, p 29
- Vulcanized fiber, April 9, p 25
- Wages, American labor and, Feb. 12, p 7
- and profits, Jan. 22, p 14
- Fitters', April 23, p 33
- for skilled labor in English shipyards, March 5, p 38
- in England and the United States, Jan. 15, p 16
- in iron mills, Reduction of, March 19, p 20
- paid on English railroads, June 11, p 16
- reduction West, Proposed, Jan. 29, p 15
- reductions, Jan. 8, p 16
- scale proposed by the Western iron manufacturers, May 21, p 11
- Wall of the wood-carver, Jan. 1, p 31
- Walrand process, June 11, p 35
- Waltham roller skate, June 4, p 37
- War, Chili since the, May 7, p 25
- Ward, Stanton & Co. assign, Jan. 1, p 31
- Warfare, High explosives in, March 19, p 35
- Warranty in sales, March 12, p 16
- Washington news, Jan. 1, p 47; 8, p 27; 15, p 17; 22, p 15; 29, p 15; Feb. 12, p 21; 19, p 27; 26, p 27; March 12, p 17; 19, p 19; 26, p 17; April 2, p 37; 9, p 25; 16, p 19; 23, p 17; 30, p 17; May 7, p 25; 14, p 17; 21, p 19; 28, p 25; June 4, p 31; 11, p 17; 18, p 19
- Territory coke, Feb. 5, p 23
- Watch and clock making, May 14, p 7
- Watchman's time detector, American, May 28, p 13
- Water by oxygen, Purification of, March 26, p 21
- cooler, Jewett's New Era, March 26, p 31
- gas dangerous? Is, March 26, p 1
- gas incandescent light, March 12, p 17
- jacket furnace, New, June 18, p 11
- jet in pile sinking, Feb. 5, p 38
- motor, Amherst, April 9, p 32
- Wear of rails, June 18, p 37
- Weight of barb-wire reels, April 30, p 11
- Weight of round, square and flat bar iron, April 23, p 11
- Weights of castings by measurements, March 26, p 33
- Well drilling machine, Ohio, Jan. 15, p 27
- wheel, New pattern, June 11, p 31
- West Coast trade, Mexican, Jan. 22, p 39
- Labor situation, May 14, p 16; June 18, p 19
- Western iron manufacturers' demand, May 21, p 18
- iron manufacturers, Wages scale proposed by the, May 21, p 11
- Nail Association, Removal of the headquarters of the, April 30, p 16
- Pennsylvania, Arbitration in, Feb. 19, p 16
- Pennsylvania coal arbitrator's award, Feb. 19, p 9
- Pennsylvania coal strike, April 16, p 18; 30, p 16
- What are tin plates? Feb. 12, p 33
- changed us from a debtor to a creditor nation, Jan. 1, p 17
- Wheat and the outlook for business, June 18, p 18
- next year, Better prices for, Jan. 1, p 37
- trade of India, April 9, p 31
- Wheeler's Lightning pipe crimper, April 30, p 31
- Wheels, Emery, and emery-wheel machinery, April 2, p 1
- Steel-tired, March 12, p 7
- Whitworth steel press, May 7, p 1
- Wholesale prices, Jan. 1, pp 32, 33, 34, 51, 52; 8, pp 28, 29, 30, 43, 44; 15, pp 28, 29, 30, 43, 44; 22, pp 26, 27, 28, 41, 42; 29, pp 26, 27, 28, 41, 42; Feb. 5, pp 34, 35, 36, 55, 56; 12, pp 26, 27, 28, 41, 42; 19, pp 28, 29, 30, 43, 44; 26, pp 28, 29, 30, 43, 44; March 5, pp 34, 35, 36, 55, 56; 12, pp 28, 29, 30, 43, 44; 19, pp 30, 31, 32, 47, 48; 26, pp 28, 29, 30, 43, 44; April 2, pp 38, 39, 40, 63, 64; 9, pp 28, 29, 30, 43, 44; 16, pp 30, 31, 32, 47, 48; 23, pp 28, 29, 30, 43, 44; 30, pp 28, 29, 30, 43, 44; May 7, pp 33, 37, 38, 59, 60; 14, pp 28, 29, 30, 43, 44; 21, pp 30, 31, 32, 47, 48; 28, pp 28, 29, 30, 43, 44; June 4, pp 34, 35, 36, 55, 56; 11, pp 28, 29, 30, 43, 44; 18, pp 30, 31, 32, 47, 48; 25, pp 28, 29, 30, 43, 44
- Widening the Suez Canal, Jan. 1, p 31
- Windmills, June 11, p 27
- Tod pumps, June 11, p 27
- History of, March 19, p 19
- Window-blind worker, May 21, p 33
- garden, Tatum's, April 30, p 31
- holder, Sash-lock and, April 2, p 41
- Wire and iron work, June 11, p 27
- currycomb, March 26, p 31
- nails, April 16, p 9
- rope for heavy cranes, Feb. 26, p 7
- tooth currycomb, Taylor's, April 2, p 41
- Wonder cross-cut saw, Feb. 19, p 31
- Wood and metal beams wound with thread, Duty on, Feb. 26, p 23
- boring machine, April 30, p 31
- carver, Wall of the, Jan. 1, p 31
- split pulleys, Jan. 15, p 11
- Wooden beam, Curious, April 23, p 33
- Work at Terre-Noire, Jan. 15, p 11
- at the new shipyard, San Francisco, Jan. 29, p 1
- of the Hartford Steam Boiler Inspection Company, April 16, p 5
- of the Philadelphia Mint, Jan. 8, p 31
- on the aqueduct, May 7, p 13
- Worker, New shutter, June 11, p 31
- Window-blind, May 21, p 33
- World, Copper production of the, June 4, p 22
- Railroads of the, March 5, p 17
- Working old steel rails, Jan. 22, p 31
- Wrench, Forged thimble skin, May 14, p 31
- Rapid Transit, Feb. 19, p 31
- Wrenches and chain tongs, Improved, March 26, p 31
- Coe's knife-handle, May 28, p 31
- Wrought-iron castings, Mitis, June 4, p 1
- iron ornaments, Jan. 15, p 11
- Wyoming Territory, Oil wells in, Jan. 1, p 7
- Yankee swivel plow, Jan. 29, p 25
- Year's result with the Edison electric light, Feb. 19, p 31
- Yellow postal notes superseded, Jan. 22, p 9
- Zinc, Depositing nickel upon, May 21, p 19
- in drinking water, April 30, p 1
- works in Spain, Jan. 15, p 27

ILLUSTRATIONS.

- Acme bolt cutter, New, April 2, p 43
- lawn mower, Feb. 26, p 33
- Adjustable ball tie, New, April 2, p 41
- Amherst water motor, April 9, p 32
- Analysis of chemical cases, Feb. 5, p 5
- Ancient foundry practice, April 16, p 1
- Angell gas governor, June 4, p 33
- Anti-friction journal bearings, Jan. 22, p 13
- Armstrong's improved snap-hook, April 2, p 41
- Automatic injector, New, March 12, p 27
- locking machine, Jan. 29, p 25
- Bailey drill, Jan. 22, p 7
- Ball bearing door hanger, April 16, p 33
- Band-saw machine, New, March 19, p 7
- Barley sifter, April 30, p 31
- Beer pump and pressure reducer, Jan. 29, p 30
- Blessing valves, Jan. 15, p 13
- Blooming mill at the Ebbw Vale Steel Works, June 18, p 9
- Boss ash and garbage case, Feb. 26, p 33
- Britton's machine for rolling steel metals, May 7, p 19
- Brock's chain pipe wrench, June 25, p 31
- Buffalo annealing furnace, May 28, p 31
- Buford's steel smoothing harrow, Jan. 22, p 7
- Buzz planer, New, March 19, p 9
- Cabinet-makers' clamp, May 21, p 33
- Car-wheel boring machine, New 48-inch, Feb. 5, p 1
- wheel chuck, New 42-inch, April 9, p 33
- Carter's needle hay knife, June 25, p 31
- Chaney's improved clothes-line pulley, March 5, p 37
- Clapp-Griffiths steel plant at Pittsburgh, New, March 12, p 1
- Climax pipe wrench, Feb. 26, p 33
- Clothes reel, June 4, p 37
- Coe's knife-handle wrenches, May 28, p 31
- Colby boiler, March 5, p 1
- portable boiler and feed-water heater, March 26, p 1
- Cole's malleable-iron lifting jack, Feb. 5, p 37
- Columbia two-track tricycle, March 26, p 9
- Combination cellar-window grate, Feb. 5, p 37
- tool, Jan. 8, p 31; June 4, p 37
- Combined beam compasses and callipers, May 21, p 34
- Compound accumulator pumping engines, April 23, p 1
- Continuous automatic brakes, Jan. 15, p 7
- Corundum knife sharpener, Feb. 5, p 37
- Covert's new patent breast chain, June 4, p 37
- Coxhead's combined saw-set and vise, April 23, p 31
- Crescent corn knife, June 4, p 37
- Creson loose-pulley arrangement, June 4, p 17
- Derby roller skate, May 21, p 33
- Design of circular shears, New, April 23, p 33
- Double-clasp blind-slat holder, April 16, p 33
- facing machine, May 14, p 33
- Economy pipe vise, March 12, p 31
- Effects of obstructions in gun barrels, Feb. 5, p 19
- Eighty-pound steel rail, Feb. 5, p 17
- Elrich ratchet screw-driver, April 2, p 41
- Emery's improved scissors sharpener, May 7, p 39
- Empire scroll-saw, March 5, p 37
- English rail-mill engines, Jan. 29, p 1
- Enterprise tobacco cutter, April 23, p 31
- Extension roller skate, April 9, p 31
- Farmers' steel plow anvil, May 14, p 31
- Flanders' spring piston packing, April 23, p 15
- Folding nail box, April 2, p 41
- Forged thimble skin wrench, May 14, p 31
- Forth bridge, April 2, p 1
- Four-sided molder, June 4, p 17
- Fox's lawn rake, May 21, p 33
- French's bench drill, May 28, p 33
- French and German experiments against chilled cast-iron armor, Jan. 8, p 1
- Frith, Edward, May 14, p 1
- Gauge ripping plane, New, May 14, p 31
- Globe ice breaker, Jan. 29, p 29
- Granite State lawn mower, April 2, p 41
- Gravity lock, New, June 18, p 33
- Guns as heat engines, April 23, p 7
- Handling dry paints, Jan. 22, p 43
- Hardening steel by pressure, May 14, p 11
- Harvard roller skate, Feb. 26, p 33
- Hazleton boiler, March 12, p 27
- Heavy English shaping machine, May 28, p 1
- Henderson mold for casting steel, May 4, p 15
- Hollows and rounds, March 26, p 31
- Horizontal boring machine, Jan. 22, p 25
- Hub lawn sprinkler, May 7, p 39
- Huntington pipe wrench, March 26, p 31
- I. I. & B. Co. vise, Jan. 15, p 31
- Ice pick and tongs, Jan. 15, p 31
- Improved hot-blast oven for the Shelby Iron Co., Alabama, Jan. 15, p 1
- hydraulic presses, Feb. 12, p 1
- Improved lever chain-testing machine, Feb. 5, p 19
- screw machines, May 21, p 20
- snatch block, March 12, p 31
- tool-cutter for pipes and tubes, Jan. 22, p 9
- wrenches and chain tongs, March 26, p 31
- Improvements in spring butts, Feb. 5, p 37
- Improvements in pumps, Feb. 5, p 37
- Iron in modern architecture, Jan. 1, p 1
- Ives sash lock, June 25, p 31
- Jenke's cord grip, April 9, p 31
- Jewett's New Era water cooler, March 26, p 31
- Jones, B. F., president American Iron and Steel Association, Feb. 19, p 1
- Jungbluth lawn and street sprinkler, May 14, p 31
- Keaton's double bench wringer, April 9, p 31
- L. & G. milk cans, April 9, p 31
- Labrador refrigerator, Feb. 19, p 31
- Ladder bracket, New, April 16, p 11
- Landerholm & Nelson self-closing boiler water-gauge, May 21, p 20
- Leavitt steam stamp at the Calumet and Hecla copper mines, June 11, p 1
- Lemon squeezer, New, Jan. 8, p 31
- Leonard refrigerator lock, April 2, p 41
- Lightning copying press, May 21, p 33
- Line of knobs, New, April 23, p 31
- Line of screw hooks, New, May 14, p 31
- Lot's Universal milling machine, April 23, p 33
- Little Giant adjustable die screw-plate, Feb. 5, p 37
- Little Jewell door check and bumper, May 21, p 33
- Low-price band-saw machine, New, Jan. 8, p 31
- Malleable iron hinge pipe-vise, Jan. 1, p 35
- Manufacture of iron and compound armor plates, May 7, p 21; 22, p 37
- Maxim machine guns, June 25, p 1
- McDaniel's suction fitting for steam-pipes, March 12, p 27
- Meriden Malleable Iron Company's metallic plane, Jan. 29, p 29
- Metal-bottom rink skate, June 11, p 31
- Method of constructing horizontal tubular boilers, New, March 19, p 35
- Milling machines, New, Feb. 26, p 33
- Modern brasswork, March 5, p 21
- Montross patent metallic shingles, April 2, p 19
- Mower knife grinder, April 30, p 31
- Norwich screwless knobs, May 28, p 31
- Novel tube vise, March 26, p 9
- Nystrom's high-speed engine and governor, Feb. 5, p 17
- Odorless hollow-ware, March 19, p 29
- Ohio anti-friction door-hanger, April 16, p 33
- well-drilling machine, Jan. 15, p 27
- On the weights of castings by measurements, March 26, p 33
- Oscillating engine, New, June 18, p 37
- Packing-box strap, March 26, p 31
- Patent metallic vise flange, Jan. 22, p 29
- Patten tin shingle, April 16, p 33
- Patten well wheel, New, June 11, p 31
- Pedestal tenoner, June 4, p 38
- Pelton's expanding reamer, May 7, p 13
- Perkins' door check, May 7, p 39
- Pipe-wrench, New, Feb. 5, p 37
- Plan for a Bessemer converting-house without a casting pit, March 19, p 1
- Planer and smoother, June 4, p 17
- Pneumatic molding machine, April 9, p 18
- Portable electric-light plant, April 30, p 1
- sugar-maker's arch, March 19, p 33
- Porter's planer chuck, May 21, p 35
- Power punching presses, New, June 4, p 1
- Pump without valves, June 25, p 33
- Punch and power presses, May 21, p 29
- Punching and shearing machine, April 2, p 7
- machine, New, Feb. 12, p 29
- Queen Anne bicycle lamp, April 30, p 31
- Rake, New, March 12, p 31
- Rapid Transit wrench, Feb. 19, p 31
- Regenerative hot-blast oven, New, May 21, p 1
- Richmond Star lawn mover, March 5, p 37
- Riveting machine, Feb. 12, p 29
- Robinson's patent draw shave, June 18, p 33
- Rotary marking gauge, May 14, p 31
- sitting shears, June 18, p 34
- Safety barb-wire fence guard, March 5, p 34
- Salisbury iron region, Feb. 5, p 9; March 26, p 7
- Sash lock and window holder, April 2, p 41
- Saw-horse heads, Jan. 29, p 29
- Screen-door corners, June 4, p 37
- Shutter worker, New, June 11, p 31
- Siemens system of gas firing as applied to boilers, New, Feb. 26, p 1
- Simplex tin-plate pickling machine, June 4, p 11
- Skein box press, Jan. 22, p 29
- Slabbing and key-seat milling machine, Jan. 22, p 25
- Small dowel machine, June 4, p 17
- Smith suspension carriage-wheel, May 14, p 31
- Some links in the history of the locomotive, Jan. 22, p 1
- Special attachment for shaping machines, March 5, p 21
- Sperry's knife sharpener, Jan. 15, p 31
- Spring-wheel for traction engines, New, May 21, p 35
- Square-hole auger, March 19, p 29
- Standard door hanger, June 4, p 37
- Steam and fire regulator, March 19, p 33
- crane, 35-ton, April 9, p 1
- Stearns' sliding door lock, May 28, p 31
- Steel-casting Bessemer plant, Jan. 29, p 31
- gates, June 11, p 31
- Stevens' new surface gauge, April 16, p 29
- Strength of crank-shafts, March 5, p 21
- Submarine tunneling, April 16, p 15
- Swing mandrel or punch holder, March 12, p 11
- Syracuse swivel plow, April 9, p 25
- tapping device, April 2, p 1
- Tatum's window garden, April 30, p 31
- Taylor's wire-tooth currycomb, April 2, p 41
- Thomas, Sidney Gilchrist, Feb. 26, p 17
- Three-way tapping machine, March 26, p 33
- Tin sprinkler head, April 23, p 31
- Tool for lathes and milling machines, New, May 21, p 25
- grinder and press, New, Feb. 19, p 31
- Topmill variable and automatic cut-off gear, April 2, p 17
- Torsion balance, June 25, p 31
- Towel holder, New, April 2, p 41
- Trenton engines, May 7, p 1
- Twisted-wire box strap, March 26, p 31
- Universal miter-box, June 4, p 37
- Vapor burners, June 11, p 31
- Vertical turret boring machine, 32-inch, April 30, p 27
- Victor scroll-saw, Jan. 15, p 31
- Waltham roller skate, June 4, p 37
- Wheeler's Lightning pipe crimper, April 30, p 31
- Whitney's meat and fruit press, March 12, p 31
- Window-blind worker, May 21, p 33
- Wire currycomb, March 26, p 31
- nails, April 16, p 9
- Wonder cross-cut saw, Feb. 19, p 31
- Wood-boring machine, April 30, p 31
- Yankee swivel plow, Jan. 29, p 25

STATISTICAL AND REFERENCE TABLES.

- Anthracite coal production in 1883 and 1884, March 5, p 7
- Basic Bessemer steel production, Jan. 8, p 17
- Bessemer steel production, Feb. 26, p 16
- Blast furnaces of the United States, Jan. 22, pp 14, 15; Feb. 12, pp 14, 15; March 12, pp 16, 17; April 9, pp 16, 17; May 14, pp 16, 17; June 11, pp 16, 17
- Caloric power of coal, May 14, p 31
- Canada, Trade of, Feb. 12, p 31
- Central American crisis, March 26, p 16
- Chilean statistics, June 25, p 27
- Cinder pig, Jan. 29, p 9
- Clapp-Griffiths process, April 30, p 17; June 25, p 17
- Coal and iron ore, Production of, in Ohio, April 23, p 9
- coal in manufactures, Consumption of, Jan. 8, p 32
- Copper production for five years, Jan. 1, p 9
- production of the world, June 4, p 22
- Cost of producing pig iron, June 18, p 18
- Customs tariffs of Cuba and Porto Rico, June 4, p 31
- Engines and boilers in France, June 11, p 32
- English Bessemer steel industry in 1884, March 12, p 1
- puttle iron companies, April 23, p 16
- vs. American blast-furnace labor, May 28, p 32
- Fish hooks, March 26, p 27
- Fitters' wages, April 23, p 33
- Food, Price of, Feb. 5, p 33; March 19, p 13
- Freight, Cost of loading and unloading, May 14, p 25
- French mineral statistics for 1883, June 4, p 33
- Heavy polished tinware, March 26, p 27
- Imports and exports of the United States, April 23, p 16
- Iron and brass screws, Jan. 22, p 22
- and steel in Germany, May 7, p 19
- and steel in Germany, Production of, in 1883, Feb. 19, p 9
- and steel production in 1884, Statistics of American, May 28, p 16
- ore and fuel in the production of iron and steel in 1884, May 21, pp 9, 18
- ore, imports of, Feb. 26, p 17
- Iron ore, Shipments of Lake Superior, in 1884, Jan. 29, p 14
- ores, Analyses of Virginia, Jan. 15, p 15
- wood screws, Jan. 8, p 24
- Japaned ware, March 12, p 25
- Lake Superior copper mines in 1884, March 26, p 16
- Superior ship canal, Feb. 12, p 31
- Low-silicon Bessemer steel, April 16, p 19
- Metal imports at New York City, Jan. 8, p 32
- Mineral production of the United States, June 25, p 16
- Minnesota Iron Co., Mines of the, April 23, p 27
- Mint, Work of the Philadelphia, for 1884, Jan. 8, p 31
- Modern automatic sprinklers, June 18, p 5
- Nails, Average wholesale store prices at Philadelphia, 1860 to 1884, Jan. 8, p 25
- New and old scale, June 25, p 17
- Natural gas in pudding, June 4, p 5
- Patent Office, Operations in 1884, Feb. 12, p 31
- Petroleum exports, Jan. 8, p 32
- Pieced tinware, March 19, p 29
- Pig and ore process, March 26, p 17
- iron districts, Comparison of, March 19, p 18
- iron in Austria-Hungary, Production and consumption of, April 2, p 21
- iron production in 1884, Feb. 12, p 14
- iron production of the South for five years, May 28, p 17
- Plumbers' brass work, May 7, p 32
- Prison labor in New York State, March 5, p 11
- Quicksilver, California, product for 1884, Feb. 5, p 37
- Railroad accidents abroad, April 9, p 32
- Rails, Cost of, in Germany, March 26, p 15
- Production and consumption of, Feb. 19, p 16
- Russia, Our trade with, April 2, p 27
- Salisbury iron region, Feb. 5, p 9
- Sargent's discount sheet, Feb. 19, p 24
- Sizes of chimneys for steam boilers, Jan. 29, p 13
- Stamped tinware, March 5, p 31
- Steam and gas fitters' brass and iron work, May 14, p 27
- Steam-boiler inspection and insurance, April 16, p 5
- Steel boiler plates, May 7, p 7
- High-phosphorus, and its rolling qualities, March 5, p 23
- rail trade, April 9, p 16
- Substitution of steel for iron, June 18, p 18
- Tackle blocks, Revised list prices of, April 23, p 25
- Tin-plate manufacture in the United States, April 30, p 1
- plates, prices of, Feb. 12, p 15
- position of, May 21, p 18
- Trade of Canada, June 4, p 17
- Transcontinental traffic, April 23, p 16
- Wages in iron mills, March 19, p 20
- scale proposed by Western iron manufacturers, May 21, p 11
- Weight of round, square and flat bar iron, April 23, p 11